

ccc gac ggg ctg ccc tgc aac ctg cgc aag ccg tgc aac cgg ccg tcg	520
Pro Asp Gly Leu Pro Cys Asn Leu Arg Lys Pro Cys Asn Arg Pro Ser	
91 96 101 106	
ggc ctc gag ccg cag ccg ggg gtc ttc gac tgc ctg cga gac gcc atg	568
Gly Leu Glu Pro Gln Pro Gly Val Phe Asp Cys Leu Arg Asp Ala Met	
107 112 117 122	
gtg cgt gac tac gtg cgc cag acg tgg aag ctg gag ggc gag gcc ctg	616
Val Arg Asp Tyr Val Arg Gln Thr Trp Lys Leu Glu Gly Glu Ala Leu	
123 128 133 138	
gag cag gcc atc atc agc cag gcc ccg cag gtg gag aag ctc att gct	664
Glu Gln Ala Ile Ile Ser Gln Ala Pro Gln Val Glu Lys Leu Ile Ala	
139 144 149 154	
acg acg gcc cac gag cgg atg ccc tgg tac cac agc agc ctg acg cgt	712
Thr Thr Ala His Glu Arg Met Pro Trp Tyr His Ser Ser Leu Thr Arg	
155 160 165 170	
gag gag gcc gag cgc aaa ctt tac tct ggg gcg cag acc gac ggc aag	760
Glu Glu Ala Glu Arg Lys Leu Tyr Ser Gly Ala Gln Thr Asp Gly Lys	
171 176 181 186	
ttc ctg ctg agg ccg cgg aag gag cag ggc aca tac gcc ctg tcc ctc	808
Phe Leu Leu Arg Pro Arg Lys Glu Gln Gly Thr Tyr Ala Leu Ser Leu	
187 192 197 202	
atc tat ggg aag acg gtg tac cac tac ctc atc agc caa gac aag gcg	856
Ile Tyr Gly Lys Thr Val Tyr His Tyr Leu Ile Ser Gln Asp Lys Ala	
203 208 213 218	
ggc aag tac tgc att ccc gag ggc acc aag ttt gag acg ctc tgg cag	904
Gly Lys Tyr Cys Ile Pro Glu Gly Thr Lys Phe Asp Thr Leu Trp Gln	
219 224 229 234	
ctg gtg gag tat ctg aag ctg aag gcg gac ggg ctc atc tac tgc ctg	952
Leu Val Glu Tyr Leu Lys Leu Lys Ala Asp Gly Leu Ile Tyr Cys Leu	
235 240 245 250	
aag gag gcc tgc ccc aac agc agt gcc agc aac gcc tca ggg gct gct	1000
Lys Glu Ala Cys Pro Asn Ser Ser Ala Ser Asn Ala Ser Gly Ala Ala	
251 256 261 266	
gct ccc aca ctc cca gcc cac cca tcc acg ttg act cat cct cag aga	1048
Ala Pro Thr Leu Pro Ala His Pro Ser Thr Leu Thr His Pro Gln Arg	
267 272 277 282	
cga atc gac acc ctc aac tca gat gga tac acc cct gag cca gca cgc	1096
Arg Ile Asp Thr Leu Asn Ser Asp Gly Tyr Thr Pro Glu Pro Ala Arg	
283 288 293 298	
ata acg tcc cca gac aaa ccg cgg ccg atg ccc atg gac acg agc gtg	1144
Ile Thr Ser Pro Asp Lys Pro Arg Pro Met Pro Met Asp Thr Ser Val	
299 304 309 314	
tat gag agc ccc tac agc gac cca gag gag ctc aag gac aag aag ctc	1192

Tyr	Glu	Ser	Pro	Tyr	Ser	Asp	Pro	Glu	Glu	Leu	Lys	Asp	Lys	Lys	Leu
315					320					325					330
ttc	ctg	aag	cgc	gat	aac	ctc	ctc	ata	gct	gac	att	gaa	ctt	ggc	tgc
Phe	Leu	Lys	Arg	Asp	Asn	Leu	Leu	Ile	Ala	Asp	Ile	Glu	Leu	Gly	Cys
331					336					341					346
ggc	aac	ttt	ggc	tca	gtg	cgc	cag	ggc	gtg	tac	cgc	atg	cgc	aag	aag
Gly	Asn	Phe	Gly	Ser	Val	Arg	Gln	Gly	Val	Tyr	Arg	Met	Arg	Lys	Lys
347					352					357					362
cag	atc	gac	gtg	gcc	atc	aag	gtg	ctg	aag	cag	ggc	acg	gag	aag	gca
Gln	Ile	Asp	Val	Ala	Ile	Lys	Val	Leu	Lys	Gln	Gly	Thr	Glu	Lys	Ala
363					368					373					378
gac	acg	gaa	gag	atg	atg	cgc	gag	gcg	cag	atc	atg	cac	cag	ctg	gac
Asp	Thr	Glu	Glu	Met	Met	Arg	Glu	Ala	Gln	Ile	Met	His	Gln	Leu	Asp
379					384					389					394
aac	ccc	tac	atc	gtg	cgg	ctc	att	ggc	gtc	tgc	cag	gcc	gag	gcc	ctc
Asn	Pro	Tyr	Ile	Val	Arg	Leu	Ile	Gly	Val	Cys	Gln	Ala	Glu	Ala	Leu
395					400					405					410
atg	ctg	gtc	atg	gag	atg	gct	ggg	ggc	ggg	ccg	ctg	cac	aag	ttc	ctg
Met	Leu	Val	Met	Glu	Met	Ala	Gly	Gly	Gly	Pro	Leu	His	Lys	Phe	Leu
411					416					421					426
gtc	ggc	aag	agg	gag	gag	atc	cct	gtg	agc	aat	gtg	gcc	gag	ctg	ctg
Val	Gly	Lys	Arg	Glu	Glu	Ile	Pro	Val	Ser	Asn	Val	Ala	Glu	Leu	Leu
427					432					437					442
cac	cag	gtg	tcc	atg	ggg	atg	aag	tac	ctg	gag	gag	aag	aac	ttt	gtg
His	Gln	Val	Ser	Met	Gly	Met	Lys	Tyr	Leu	Glu	Glu	Lys	Asn	Phe	Val
443					448					453					458
cac	cgt	gac	ctg	gcg	gcc	cgc	aac	gtc	ctg	ctg	gtt	aac	cgg	cac	tac
His	Arg	Asp	Leu	Ala	Ala	Arg	Asn	Val	Leu	Leu	Val	Asn	Arg	His	Tyr
459					464					469					474
gcc	aag	atc	agc	gac	ttt	ggc	ctc	tcc	aaa	gca	ctg	ggt	gcc	gac	gac
Ala	Lys	Ile	Ser	Asp	Phe	Gly	Leu	Ser	Lys	Ala	Leu	Gly	Ala	Asp	Asp
475					480					485					490
agc	tac	tac	act	gcc	cgc	tca	gca	ggg	aag	tgg	ccg	ctc	aag	tgg	tac
Ser	Tyr	Tyr	Thr	Ala	Arg	Ser	Ala	Gly	Lys	Trp	Pro	Leu	Lys	Trp	Tyr
491					496					501					506
gca	ccc	gaa	tgc	atc	aac	ttc	cgc	aag	ttc	tcc	agc	cgc	agc	gat	gtc
Ala	Pro	Glu	Cys	Ile	Asn	Phe	Arg	Lys	Phe	Ser	Ser	Arg	Ser	Asp	Val
507					512					517					522
tgg	agc	tat	ggg	gtc	acc	atg	tgg	gag	gcc	ttg	tcc	tac	ggc	cag	aag
Trp	Ser	Tyr	Gly	Val	Thr	Met	Trp	Glu	Ala	Leu	Ser	Tyr	Gly	Gln	Lys
523															

539	544	549	554	
ggc aag cgg atg gag tgc cca cca gag tgt cca ccc gaa ctg tac gca				1912
Gly Lys Arg Met Glu Cys Pro Pro Glu Cys Pro Pro Glu Leu Tyr Ala				
555	560	565	570	
ctc atg agt gac tgc tgg atc tac aag tgg gag gat cgc ccc gac ttc				1960
Leu Met Ser Asp Cys Trp Ile Tyr Lys Trp Glu Asp Arg Pro Asp Phe				
571	576	581	586	
ctg acc gtg gag cag cgc atg cga gcc tgt tac tac agc ctg gcc agc				2008
Leu Thr Val Glu Gln Arg Met Arg Ala Cys Tyr Tyr Ser Leu Ala Ser				
587	592	597	602	
aag gtg gaa ggg ccc cca ggc agc aca cag aag gct gag gct gcc tgt				2056
Lys Val Glu Gly Pro Pro Gly Ser Thr Gln Lys Ala Glu Ala Ala Cys				
603	608	613	618	

gcc tga gctccccgctg cccagggggag ccctccacgc cggctcttcc ccaccctcag	2112
Ala *	
619	
ccccaccca ggtcctgcag tctggctgag ccctgcttgg ttgtctccac acacagctgg	2172
gctgtggttag ggggtgtctc aggccacacc ggccttgcat tgccctgctg gccccctgtc	2232
ctctctggct ggggagcagg gaggtccggg aggggtgcggc tgtgcagcct gtcctgggct	2292
ggtggctccc ggagggccct gagctgaggg cattgcttac acggatgcct tcccctgggc	2352
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gcagctagaa cagcctggtc aggagcgtaa cggagtgggtg cgccaacgtg agaggaaacc	180
cgtgcgcggc tgcgctttcc tgtccccaa ¹ g ccgttctaga cgcgggaaaa atg ctt	236
	Met Leu

1

tct gaa agc agc tcc ttt ttg aag ggt gtg atg ctt gga agc att ttc	284
Ser Glu Ser Ser Ser Phe Leu Lys Gly Val Met Leu Gly Ser Ile Phe	
3 8 13 18	
tgt gct ttg atc act atg cta gga cac att agg att ggt cat gga aat	332
Cys Ala Leu Ile Thr Met Leu Gly His Ile Arg Ile Gly His Gly Asn	
19 24 29 34	
aga atg cac cac cat gag cat cat cac cta caa gct cct aac aaa gaa	380
Arg Met His His His Glu His His His Leu Gln Ala Pro Asn Lys Glu	
35 40 45 50	
gat atc ttg aaa att tca gag gat gag cgc atg gag ctc agt aag agc	428
Asp Ile Leu Lys Ile Ser Glu Asp Glu Arg Met Glu Leu Ser Lys Ser	
51 56 61 66	
ttt cga gta tac tgt att atc ctt gta aaa ccc aaa gat gtg agt ctt	476
Phe Arg Val Tyr Cys Ile Ile Leu Val Lys Pro Lys Asp Val Ser Leu	
67 72 77 82	
tgg gct gca gta aag gag act tgg acc aaa cac tgt gac aaa gca gag	524
Trp Ala Ala Val Lys Glu Thr Trp Thr Lys His Cys Asp Lys Ala Glu	
83 88 93 98	
ttc ttc agt tct gaa aat gtt aaa gag ttt gag tca att aat atg gac	572
Phe Phe Ser Ser Glu Asn Val Lys Glu Phe Glu Ser Ile Asn Met Asp	
99 104 109 114	
aca aat gac atg tgg tta atg atg aga aaa gct tac aaa tac gcc ttt	620
Thr Asn Asp Met Trp Leu Met Met Arg Lys Ala Tyr Lys Tyr Ala Phe	
115 120 125 130	
gat aag tat aga gac caa tac aac tgg ttc ttc ctt gca cgc ccc act	668
Asp Lys Tyr Arg Asp Gln Tyr Asn Trp Phe Phe Leu Ala Arg Pro Thr	
131 136 141 146	
acg ttt gct atc att gaa aac cta aag tat ttt ttg tta aaa aag gat	716
Thr Phe Ala Ile Ile Glu Asn Leu Lys Tyr Phe Leu Leu Lys Lys Asp	
147 152 157 162	
cca tca cag cct ttc tat cta ggc cac act ata aaa tct gga gac ctt	764
Pro Ser Gln Pro Phe Tyr Leu Gly His Thr Ile Lys Ser Gly Asp Leu	
163 168 173 178	
gaa tat gtg ggt atg gaa gga gga att gtc tta agt gta gaa tca atg	812
Glu Tyr Val Gly Met Glu Gly Gly Ile Val Leu Ser Val Glu Ser Met	
179 184 189 194	
aaa aga ctt aac agc ctt ctc aat atc cca gaa aag tgt cct gaa cag	860
Lys Arg Leu Asn Ser Leu Leu Asn Ile Pro Glu Lys Cys Pro Glu Gln	
195 200 205 210	
gga ggg atg att tgg aag ata tct gaa gat aaa cag cta gca gtt tgc	908
Gly Gly Met Ile Trp Lys Ile Ser Glu Asp Lys Gln Leu Ala Val Cys	
211 216 221 226	
ctg aaa tat gct gga gta ttt gca gaa aat gca gaa gat gct gat gga	956

gat ctt gga gaa att cat tca agg ctt ttg gat cac aga cca gtt att	198
Asp Leu Gly Glu Ile His Ser Arg Leu Leu Asp His Arg Pro Val Ile	
38 43 48 53	
caa ggt gaa act cgt tat ttt gta aaa gaa ttt gaa gaa aaa cgt ggt	246
Gln Gly Glu Thr Arg Tyr Phe Val Lys Glu Phe Glu Glu Lys Arg Gly	
54 59 64 69	
ctt cga gaa atg cga gtt ctt gaa aat ttg aag aac atg atc cat gaa	294
Leu Arg Glu Met Arg Val Leu Glu Asn Leu Lys Asn Met Ile His Glu	
70 75 80 85	
aca aat gaa cat act ctt ccc aaa tgt aga gac aca atg cgg gac agc	342
Thr Asn Glu His Thr Leu Pro Lys Cys Arg Asp Thr Met Arg Asp Ser	
86 91 96 101	
ctc agc cag gtt ctc cag aga ttg caa gca gct aat gac tca gtc tgt	390
Leu Ser Gln Val Leu Gln Arg Leu Gln Ala Ala Asn Asp Ser Val Cys	
102 107 112 117	
aga ctc caa cag agg gaa cag gaa cga aaa aag att cat agt gac cac	438
Arg Leu Gln Gln Arg Glu Gln Glu Arg Lys Lys Ile His Ser Asp His	
118 123 128 133	
tta gta gct agt gag aaa cag cat atg ctc cag tgg gac aac ttc atg	486
Leu Val Ala Ser Glu Lys Gln His Met Leu Gln Trp Asp Asn Phe Met	
134 139 144 149	
aag gag caa ccc aac aaa agg gct gaa gtg gat gaa gag cac aga aaa	534
Lys Glu Gln Pro Asn Lys Arg Ala Glu Val Asp Glu Glu His Arg Lys	
150 155 160 165	
gcc atg gaa agg ctt aaa gaa caa tat gct gag atg gag aag gac cta	582
Ala Met Glu Arg Leu Lys Glu Gln Tyr Ala Glu Met Glu Lys Asp Leu	
166 171 176 181	
gcg aaa ttt tca acc ttt taa ga acttgaacca caacaatcac aaactaatga	635
Ala Lys Phe Ser Thr Phe *	
182 187	
gaagatgttc acctctctcc tgaaaactat tcccaccaga ccgtttagcc tctgcttcaa	695
gcttagcaat atattcagtg gcactcttat atcagaagaa agaagtttct actggcattc	755
tgattggata tttaaagaag ggtgccacat tttccagct ttaagtgcct atatatgatt	815
atttgaatga agaggagt agaggaaaat ggaatcaata tactctttgt tagtcagaat	875
tgatcatctt ttccattgat tagctcagag aactgtaggt atagacttct tagaaagata	935
atttcattca tttctataca gggttaacaa tagtttatta ttgtggctta atgggaaggt	995
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tgagtaatgt agacaaaaaa aaaaaaa	1082

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 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (304)..(1677)

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 tcccgggtggg gaacgtgaga tcagcggggg cgtggactga tctgaaaggg cagagtggag 180
 tcgcattgtg aggggggtggg caagcgggtct gcgaagcctc ggcccgcagg gtacatctga 240
 aggatcctta attaaattaa tccccccccc cccccaaaat agtgggtgatg tcatgcaggc 300
 aag atg gcg gaa ggg gag gac gtg gga tgg tgg cgg agc tgg ctg cag 348
 Met Ala Glu Gly Glu Asp Val Gly Trp Trp Arg Ser Trp Leu Gln
 1 5 10
 cag agc tac caa gca gtc aaa gag aag tcc tct gaa gcc ttg gag ttt 396
 Gln Ser Tyr Gln Ala Val Lys Glu Lys Ser Ser Glu Ala Leu Glu Phe
 16 21 26 31
 atg aag cgg gac ctg acg gag ttt acc cag gtg gtg cag cat gac acg 444
 Met Lys Arg Asp Leu Thr Glu Phe Thr Gln Val Val Gln His Asp Thr
 32 37 42 47
 gcc tgt acc atc gca gcc acg gcc agc gtg gtc aag gag aag ctg gct 492
 Ala Cys Thr Ile Ala Ala Thr Ala Ser Val Val Lys Glu Lys Leu Ala
 48 53 58 63
 acg gaa ggc tcc tca gga gca aca gag aag atg aag aaa ggg tta tct 540
 Thr Glu Gly Ser Ser Gly Ala Thr Glu Lys Met Lys Lys Gly Leu Ser
 64 69 74 79
 gac ttc cta ggg gtg atc tca gac acc ttt gcc cct tcg cca gac aaa 588
 Asp Phe Leu Gly Val Ile Ser Asp Thr Phe Ala Pro Ser Pro Asp Lys
 80 85 90 95
 acc atc gac tgc gat gtc atc acc ctg atg ggc aca ccg tct ggc aca 636
 Thr Ile Asp Cys Asp Val Ile Thr Leu Met Gly Thr Pro Ser Gly Thr
 96 101 106 111
 gct gag ccc tat gat ggc acc aag gct cgc ctc tat agc ctg cag tcg 684
 Ala Glu Pro Tyr Asp Gly Thr Lys Ala Arg Leu Tyr Ser Leu Gln Ser
 112 117 122 127
 gac cca gca acc tac tgt aat gaa cca gat ggg ccc ccg gaa ttg ttt 732
 Asp Pro Ala Thr Tyr Cys Asn Glu Pro Asp Gly Pro Pro Glu Leu Phe

128	133	138	143	
gac gcc tgg ctt tcc cag ttc tgc ttg gag gag aag aag ggg gag atc				780
Asp Ala Trp Leu Ser Gln Phe Cys Leu Glu Glu Lys Lys Gly Glu Ile				
144	149	154	159	
tca gag ctc ctt gta ggc agc ccc tcc atc cgg gcc ctc tac acc aag				828
Ser Glu Leu Leu Val Gly Ser Pro Ser Ile Arg Ala Leu Tyr Thr Lys				
160	165	170	175	
atg gtt cca gca gct gtt tcc cat tca gaa ttc tgg cat cgg tat ttc				876
Met Val Pro Ala Ala Val Ser His Ser Glu Phe Trp His Arg Tyr Phe				
176	181	186	191	
tat aaa gtc cat cag tta gag cag gag cag gcc cgg agg gac gcc ctg				924
Tyr Lys Val His Gln Leu Glu Gln Glu Gln Ala Arg Arg Asp Ala Leu				
192	197	202	207	
aag cag cgg gcg gaa cag agc atc tct gaa gag ccc gcc tgg gag gag				972
Lys Gln Arg Ala Glu Gln Ser Ile Ser Glu Glu Pro Gly Trp Glu Glu				
208	213	218	223	
gag gaa gag gag ctc atg ggc att tca ccc ata tct cca aaa gag gca				1020
Glu Glu Glu Glu Leu Met Gly Ile Ser Pro Ile Ser Pro Lys Glu Ala				
224	229	234	239	
aag gtt cct gtg gcc aaa att tct aca ttc cct gaa gga gaa cct ggc				1068
Lys Val Pro Val Ala Lys Ile Ser Thr Phe Pro Glu Gly Glu Pro Gly				
240	245	250	255	
ccc cag agc ccc tgt gaa gag aat ctg gtg act tca gtt gag ccc cca				1116
Pro Gln Ser Pro Cys Glu Glu Asn Leu Val Thr Ser Val Glu Pro Pro				
256	261	266	271	
gca gag gtg act cca tca gag agc agt gag agc atc tcc ctc gtg aca				1164
Ala Glu Val Thr Pro Ser Glu Ser Ser Glu Ser Ile Ser Leu Val Thr				
272	277	282	287	
cag atc gcc aac ccg gcc act gca cct gag gca cga gtg cta ccc aag				1212
Gln Ile Ala Asn Pro Ala Thr Ala Pro Glu Ala Arg Val Leu Pro Lys				
288	293	298	303	
gac ctg tcc caa aag ctg cta gag gca tcc ttg gag gaa cag ggc ctg				1260
Asp Leu Ser Gln Lys Leu Leu Glu Ala Ser Leu Glu Glu Gln Gly Leu				
304	309	314	319	
gct gtg gat gtg ggt gag act gga ccc tca ccc cct att cac tcc aag				1308
Ala Val Asp Val Gly Glu Thr Gly Pro Ser Pro Pro Ile His Ser Lys				
320	325	330	335	
ccc cta acg cct gct ggc cac acc ggc ggc cca gag ccc agg cct cca				1356
Pro Leu Thr Pro Ala Gly His Thr Gly Gly Pro Glu Pro Arg Pro Pro				
336	341	346	351	
gcc aga gta gag act ctg agg gag gag gcg ccc aca gac tta cgg gtg				1404
Ala Arg Val Glu Thr Leu Arg Glu Glu Ala Pro Thr Asp Leu Arg Val				
352	357	362	367	

ttt gag ctg aac tcg gat agt ggg aag tct aca ccc tcc aac aat gga	1452
Phe Glu Leu Asn Ser Asp Ser Gly Lys Ser Thr Pro Ser Asn Asn Gly	
368 373 378 383	
aag aaa ggc tca agc acg gac atc agt gag gac tgg gag aaa gac ttt	1500
Lys Lys Gly Ser Ser Thr Asp Ile Ser Glu Asp Trp Glu Lys Asp Phe	
384 389 394 399	
gac ttg gac atg act gaa gag gag gtg cag atg gca ctt tcc aaa gtg	1548
Asp Leu Asp Met Thr Glu Glu Glu Val Gln Met Ala Leu Ser Lys Val	
400 405 410 415	
gat gcc tcc ggg gag gtg agt ggg cct ggt ggg tca gag gga agc gag	1596
Asp Ala Ser Gly Glu Val Ser Gly Pro Gly Gly Ser Glu Gly Ser Glu	
416 421 426 431	
cct aat ggt cct ggg tgt gag agc tct ccc cag cca gcc cag ctg tcc	1644
Pro Asn Gly Pro Gly Cys Glu Ser Ser Pro Gln Pro Ala Gln Leu Ser	
432 437 442 447	
cct cag gag ggt ccc tgc tcc tgt ctg agg tga caggtggt gggaaaggag	1695
Pro Gln Glu Gly Pro Cys Ser Cys Leu Arg *	
448 453 458	
ctggagcttc ctgctcagac ccacaacatt ggtcatcagc aggctgcact tttcctcagt	1755
tccagggtgg atagaggggc aagttcttga ccttagctct gtatcaaaat tgcttgagaa	1815
actgcttaag aaaacagatg tcatgctgag cgcggtggct cacacctgta atcccaacac	1875
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 <222> (304) .. (1728)

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tcccgggtggg gaacgtgaga tcagcggggg cgtggactga tctgaaaggg cagagtggag	180
tcgcattgtg aggggggtggg caagcgggtct gcgaagcctc ggcccgcagg gtacatctga	240
aggatcctta attaaattaa tccccccccc cccccaaaat agtggtgatg tcatgcaggc	300

aag	atg	gcg	gaa	ggg	gag	gac	gtg	gga	tgg	tgg	cgg	agc	tgg	ctg	cag	348
Met	Ala	Glu	Gly	Glu	Asp	Val	Gly	Trp	Trp	Arg	Ser	Trp	Leu	Gln		
1				5					10							
cag	agc	tac	caa	gca	gtc	aaa	gag	aag	tcc	tct	gaa	gcc	ttg	gag	ttt	396
Gln	Ser	Tyr	Gln	Ala	Val	Lys	Glu	Lys	Ser	Ser	Glu	Ala	Leu	Glu	Phe	
16				21					26					31		
atg	aag	cgg	gac	ctg	acg	gag	ttt	acc	cag	gtg	gtg	cag	cat	gac	acg	444
Met	Lys	Arg	Asp	Leu	Thr	Glu	Phe	Thr	Gln	Val	Val	Gln	His	Asp	Thr	
32				37					42					47		
gcc	tgt	acc	atc	gca	gcc	acg	gcc	agc	gtg	gtc	aag	gag	aag	ctg	gct	492
Ala	Cys	Thr	Ile	Ala	Ala	Thr	Ala	Ser	Val	Val	Lys	Glu	Lys	Leu	Ala	
48				53					58					63		
att	gca	gcc	tgt	tcc	cgg	ggc	gct	tgc	ttc	ctc	tgc	ccg	ttc	tct	ata	540
Ile	Ala	Ala	Cys	Ser	Arg	Gly	Ala	Cys	Phe	Leu	Cys	Pro	Phe	Ser	Ile	
64				69					74					79		
cag	acg	gaa	ggc	tcc	tca	gga	gca	aca	gag	aag	atg	aag	aaa	ggg	tta	588
Gln	Thr	Glu	Gly	Ser	Ser	Gly	Ala	Thr	Glu	Lys	Met	Lys	Lys	Gly	Leu	
80				85					90					95		
tct	gac	ttc	cta	ggg	gtg	atc	tca	gac	acc	ttt	gcc	cct	tcg	cca	gac	636
Ser	Asp	Phe	Leu	Gly	Val	Ile	Ser	Asp	Thr	Phe	Ala	Pro	Ser	Pro	Asp	
96				101					106					111		
aaa	acc	atc	gac	tgc	gat	gtc	atc	acc	ctg	atg	ggc	aca	ccg	tct	ggc	684
Lys	Thr	Ile	Asp	Cys	Asp	Val	Ile	Thr	Leu	Met	Gly	Thr	Pro	Ser	Gly	
112				117					122					127		
aca	gct	gag	ccc	tat	gat	ggc	acc	aag	gct	cgc	ctc	tat	agc	ctg	cag	732
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128				133					138					143		
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Ser	Asp	Pro	Ala	Thr	Tyr	Cys	Asn	Glu	Pro	Asp	Gly	Pro	Pro	Glu	Leu	
144				149					154					159		
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Phe	Asp	Ala	Trp	Leu	Ser	Gln	Phe	Cys	Leu	Glu	Glu	Lys	Lys	Gly	Glu	
160				165					170					175		
atc	tca	gag	ctc	ctt	gta	ggc	agc	ccc	tcc	atc	cgg	gcc	ctc	tac	acc	876
Ile	Ser	Glu	Leu	Leu	Val	Gly	Ser	Pro	Ser	Ile	Arg	Ala	Leu	Tyr	Thr	
176				181					186					191		
aag	atg	gtt	cca	gca	gct	gtt	tcc	cat	tca	gaa	ttc	tgg	cat	cgg	tat	924
Lys	Met	Val	Pro	Ala	Ala	Val	Ser	His	Ser	Glu	Phe	Trp	His	Arg	Tyr	
192				197					202					207		
ttc	tat	aaa	gtc	cat	cag	tta	gag	cag	gag	cag	gcc	cgg	agg	gac	gcc	972
Phe	Tyr	Lys	Val	His	Gln	Leu	Glu	Gln	Glu	Gln	Ala	Arg	Arg	Asp	Ala	
208				213					218					223		

Glu	Pro	Asn	Gly	Pro	Gly	Cys	Glu	Ser	Ser	Pro	Gln	Pro	Ala	Gln	Leu	
448					453					458					463	
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Ser Pro Gln Glu Gly Pro Cys Ser Cys Leu Arg *																
464					469					474						
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cagttccagg gtggatagag ggtcaagttc ttgaccttag ctctgtatca aaattgcctg																1862
agaaactgct taagaaaaca gatgtcatgc tgagcgcggg ggctcacacc tgtaatccca																1922
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aagggtaaag ggagggcagt gggctctgag ctaggaggag gtggcccagc cacttctgca																180
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tgggtctgca aac atg aca aag aaa aaa gtc tcc caa aag aag cag aga																529
Met Thr Lys Lys Lys Val Ser Gln Lys Lys Gln Arg																
1 5 10																
ggc cga cct tca tcc cag ccc cgc agg aac atc gtg ggc tgc aga att																577
Gly Arg Pro Ser Ser Gln Pro Arg Arg Asn Ile Val Gly Cys Arg Ile																
13 18 23 28																
tct cat gga tgg aag gaa gga gat gag ccc atc acg cag tgg aaa gga																625
Ser His Gly Trp Lys Glu Gly Asp Glu Pro Ile Thr Gln Trp Lys Gly																
29 34 39 44																

acc gtt ctg gat cag gtg cct ata aat ccc tct ctt tat ctg gtg aaa	673
Thr Val Leu Asp Gln Val Pro Ile Asn Pro Ser Leu Tyr Leu Val Lys	
45 50 55 60	
tat gat gga att gac tgt gtc tat gga ctg gaa ctt cac aga gat gaa	721
Tyr Asp Gly Ile Asp Cys Val Tyr Gly Leu Glu Leu His Arg Asp Glu	
61 66 71 76	
agg gtt ttg tct ctt aaa att ctt tct gac agg gtg gca tca tct cac	769
Arg Val Leu Ser Leu Lys Ile Leu Ser Asp Arg Val Ala Ser Ser His	
77 82 87 92	
att agt gat gcc aac ctt gca aat acc ata att ggc aaa gca gtg gaa	817
Ile Ser Asp Ala Asn Leu Ala Asn Thr Ile Ile Gly Lys Ala Val Glu	
93 98 103 108	
cac atg ttt gag gga gag cat ggt tct aag gat gaa tgg agg ggg atg	865
His Met Phe Glu Gly Glu His Gly Ser Lys Asp Glu Trp Arg Gly Met	
109 114 119 124	
gtc tta gct caa gca cct atc atg aaa gcc tgg ttt tat att acc tat	913
Val Leu Ala Gln Ala Pro Ile Met Lys Ala Trp Phe Tyr Ile Thr Tyr	
125 130 135 140	
gag aaa gat cct gtc ttg tac atg tac cag ctt cta gat gat tat aag	961
Glu Lys Asp Pro Val Leu Tyr Met Tyr Gln Leu Leu Asp Asp Tyr Lys	
141 146 151 156	
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Glu Gly Asp Leu Arg Ile Met Pro Glu Ser Ser Glu Ser Pro Pro Thr	
157 162 167 172	
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Glu Arg Glu Pro Gly Gly Val Val Asp Gly Leu Ile Gly Lys His Val	
173 178 183 188	
gaa tat acc aaa gaa gat ggc tcc aaa agg atc ggc atg gtc att cac	1105
Glu Tyr Thr Lys Glu Asp Gly Ser Lys Arg Ile Gly Met Val Ile His	
189 194 199 204	
caa gtg gaa acc aaa ccc tct gtg tat ttc atc aag ttt gat gat gat	1153
Gln Val Glu Thr Lys Pro Ser Val Tyr Phe Ile Lys Phe Asp Asp Asp	
205 210 215 220	
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Phe His Ile Tyr Val Tyr Asp Leu Val Lys Lys Ser *	
221 226 231	
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tgttgttttg ctctaaaaaa tacaaatttg tgaatacatg acatgctgtc tgtaagccct	1382
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gca cag gaa gcc gaa ggg caa caa acc agg gca gct gca gga cgg gcc	283
Ala Gln Glu Ala Glu Gly Gln Gln Thr Arg Ala Ala Ala Gly Arg Ala	
6 11 16 21	
act ggg tct gca aac atg aca aag aaa aaa gtc tcc caa aag aag cag	331
Thr Gly Ser Ala Asn Met Thr Lys Lys Lys Val Ser Gln Lys Lys Gln	
22 27 32 37	
aga ggc cga cct tca tcc cag ccc cgc agg aac atc gtg ggc tgc aga	379
Arg Gly Arg Pro Ser Ser Gln Pro Arg Arg Asn Ile Val Gly Cys Arg	
38 43 48 53	
att tct cat gga tgg aag gaa gga gat gag ccc atc acg cag tgg aaa	427
Ile Ser His Gly Trp Lys Glu Gly Asp Glu Pro Ile Thr Gln Trp Lys	
54 59 64 69	
gga acc gtt ctg gat cag gtg cct ata aat ccc tct ctt tat ctg gtg	475
Gly Thr Val Leu Asp Gln Val Pro Ile Asn Pro Ser Leu Tyr Leu Val	
70 75 80 85	
aaa tat gat gga att gac tgt gtc tat gga ctg gaa ctt cac aga gat	523
Lys Tyr Asp Gly Ile Asp Cys Val Tyr Gly Leu Glu Leu His Arg Asp	
86 91 96 101	
gaa agg gtt ttg tct ctt aaa att ctt tct gac agg gtg gca tca tct	571
Glu Arg Val Leu Ser Leu Lys Ile Leu Ser Asp Arg Val Ala Ser Ser	
102 107 112 117	
cac att agt gat gcc aac ctt gca aat acc ata att ggc aaa gca gtg	619
His Ile Ser Asp Ala Asn Leu Ala Asn Thr Ile Ile Gly Lys Ala Val	
118 123 128 133	
gaa cac atg ttt gag gga gag cat ggt tct aag gat gaa tgg agg ggg	667
Glu His Met Phe Glu Gly Glu His Gly Ser Lys Asp Glu Trp Arg Gly	
134 139 144 149	
atg gtc tta gct caa gca cct atc atg aaa gcc tgg ttt tat att acc	715
Met Val Leu Ala Gln Ala Pro Ile Met Lys Ala Trp Phe Tyr Ile Thr	
150 155 160 165	
tat gag aaa gat cct gtc ttg tac atg tac cag ctt cta gat gat tat	763
Tyr Glu Lys Asp Pro Val Leu Tyr Met Tyr Gln Leu Leu Asp Asp Tyr	
166 171 176 181	
aag gaa ggt gac ctg cgc atc atg cca gaa tcc agt gag tct cct cca	811
Lys Glu Gly Asp Leu Arg Ile Met Pro Glu Ser Ser Glu Ser Pro Pro	
182 187 192 197	
aca gag agg gag cca gga gga gtt gta gat ggc cta ata ggt aag cat	859
Thr Glu Arg Glu Pro Gly Gly Val Val Asp Gly Leu Ile Gly Lys His	
198 203 208 213	
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Val Glu Tyr Thr Lys Glu Asp Gly Ser Lys Arg Ile Gly Met Val Ile	
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 Met
 1
 cca ggc aga ggc cgc tgc ccg gac tgc ggc tcc acg gag ctg gtg gaa 165
 Pro Gly Arg Gly Arg Cys Pro Asp Cys Gly Ser Thr Glu Leu Val Glu
 2 7 12 17
 gac tcg cac tat tcg cag agc cag ctg gtg tgc tcc gac tgc ggc tgc 213
 Asp Ser His Tyr Ser Gln Ser Gln Leu Val Cys Ser Asp Cys Gly Cys
 18 23 28 33
 gtg gtc acc gag ggg gtc ctt acc act acc ttc agc gac gag ggc aat 261
 Val Val Thr Glu Gly Val Leu Thr Thr Thr Phe Ser Asp Glu Gly Asn
 34 39 44 49
 ctc cga gag gta aca tat tcc cga agc aca ggg gaa aac gaa caa gtt 309
 Leu Arg Glu Val Thr Tyr Ser Arg Ser Thr Gly Glu Asn Glu Gln Val
 50 55 60 65
 agt cgc agc cag caa cga ggt ctc cgg cga gtg aga gac ctt tgt cga 357
 Ser Arg Ser Gln Gln Arg Gly Leu Arg Arg Val Arg Asp Leu Cys Arg
 66 71 76 81
 gtt ctg cag ttg cca cca aca ttt gag gat acc gcg gtt gcc tac tac 405
 Val Leu Gln Leu Pro Pro Thr Phe Glu Asp Thr Ala Val Ala Tyr Tyr
 82 87 92 97
 caa cag gca tat cgg cac tct ggc atc cga gcg gcc agg ctg caa aag 453
 Gln Gln Ala Tyr Arg His Ser Gly Ile Arg Ala Ala Arg Leu Gln Lys
 98 103 108 113
 aag gag gtg ttg gtt ggg tgc tgc gtc tta atc acc tgc cga cag cat 501
 Lys Glu Val Leu Val Gly Cys Cys Val Leu Ile Thr Cys Arg Gln His
 114 119 124 129
 aac tgg ccc cta aca atg ggg gcc atc tgc acg ctg ttg tat gca gat 549
 Asn Trp Pro Leu Thr Met Gly Ala Ile Cys Thr Leu Leu Tyr Ala Asp
 130 135 140 145
 ttg gat gtg ttt tct agc act tac atg cag ata gtg aag ctc ctg gga 597
 Leu Asp Val Phe Ser Ser Thr Tyr Met Gln Ile Val Lys Leu Leu Gly
 146 151 156 161
 ctg gat gtg cca tct ctg tgc ttg gca gaa ctg gtg aag acc tat tgc 645
 Leu Asp Val Pro Ser Leu Cys Leu Ala Glu Leu Val Lys Thr Tyr Cys

162	167	172	177	
agc agc ttc aaa ctg ttc caa gct tca cct tct gtg cca gcc aaa tac				693
Ser Ser Phe Lys Leu Phe Gln Ala Ser Pro Ser Val Pro Ala Lys Tyr				
178	183	188	193	
gta gaa gac aaa gag aag atg ctg tct cga aca atg cag ttg gtg gag				741
Val Glu Asp Lys Glu Lys Met Leu Ser Arg Thr Met Gln Leu Val Glu				
194	199	204	209	
ctg gca aat gag acg tgg ctg gtg acc ggg agg cat ccc ttg ccc gtc				789
Leu Ala Asn Glu Thr Trp Leu Val Thr Gly Arg His Pro Leu Pro Val				
210	215	220	225	
atc act gct gcg act ttc ctg gct tgg cag tcg ctg cag cct gca gat				837
Ile Thr Ala Ala Thr Phe Leu Ala Trp Gln Ser Leu Gln Pro Ala Asp				
226	231	236	241	
cgg ctt tca tgt tcc ctt gcc cga ttt tgt aaa ttg gca aat gtg gac				885
Arg Leu Ser Cys Ser Leu Ala Arg Phe Cys Lys Leu Ala Asn Val Asp				
242	247	252	257	
ctg ccc tac ccg gcg tcc tcc cgc ctg cag gag ctg ctg gct gtg ctg				933
Leu Pro Tyr Pro Ala Ser Ser Arg Leu Gln Glu Leu Leu Ala Val Leu				
258	263	268	273	
ctg cgg atg gct gag cag ctg gcc tgg tta cga gtt ctg aga ctt gac				981
Leu Arg Met Ala Glu Gln Leu Ala Trp Leu Arg Val Leu Arg Leu Asp				
274	279	284	289	
aaa cgg tct gtg gtg aag cac atc ggt gac ctt ctc cag cac cgc cag				1029
Lys Arg Ser Val Val Lys His Ile Gly Asp Leu Leu Gln His Arg Gln				
290	295	300	305	
tca ctg gtc cgc tct gcc ttt cgg gat ggg aca gca gaa gtg gag acc				1077
Ser Leu Val Arg Ser Ala Phe Arg Asp Gly Thr Ala Glu Val Glu Thr				
306	311	316	321	
cga gag aag gag cca ccg ggg tgg gga cag ggg caa gga gaa ggg gag				1125
Arg Glu Lys Glu Pro Pro Gly Trp Gly Gln Gly Gln Gly Glu Gly Glu				
322	327	332	337	
gtg gga aat aat tcc tta ggt tta ccc cag ggg aag cgg ccg gcc agt				1173
Val Gly Asn Asn Ser Leu Gly Leu Pro Gln Gly Lys Arg Pro Ala Ser				
338	343	348	353	
cct gcc ctt ctc ttg cca ccc tgc atg ttg aag tcc ccg aag cgg atc				1221
Pro Ala Leu Leu Leu Pro Pro Cys Met Leu Lys Ser Pro Lys Arg Ile				
354	359	364	369	
tgc cct gta ccc cct gtc tcc act gtc act gga gat gag aac att tct				1269
Cys Pro Val Pro Pro Val Ser Thr Val Thr Gly Asp Glu Asn Ile Ser				
370	375	380	385	
gat agt gaa ata gaa cag tat ttg cgt acc cct cag gaa gtt agg gac				1317
Asp Ser Glu Ile Glu Gln Tyr Leu Arg Thr Pro Gln Glu Val Arg Asp				
386	391	396	401	

ttt cag aga gcc cag gct gct aga cag gct gcc acg agt gtc cct aac	1365
Phe Gln Arg Ala Gln Ala Ala Arg Gln Ala Ala Thr Ser Val Pro Asn	
402 407 412 417	

cct ccc tga tggatat ccactgggag cacttcatcc tgttctgaca gcttgataac	1421
Pro Pro *	
418	

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tgaaggaacc aagaggggct ctgccattag ttggaccctg ggtcctggag taaagtcagg	1541
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ctggggaatt ctggccctac gtgcattcac aggcaatgat gggtttgtgt gtatgggtgc	1841
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atgagatcct ctacctcata acaaaaggac agtgggtaga ctaaggcagt agctcaaagg	1901
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taaaaccgga gttcttaaaa aaaaaaaaa	1989
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ctcccggagc tgcccagtgg ctgccttgtc cttcaagtgc aggagctggt tcaa atg	177
	Met
	1

tca gga atg gaa gcc act gtg acc atc cca atc tgg caa aac aag cca	225
Ser Gly Met Glu Ala Thr Val Thr Ile Pro Ile Trp Gln Asn Lys Pro	
2 7 12 17	

cat ggg gct gct cga agt gta gta aga att ggg acc aac cta ccc	273
His Gly Ala Ala Arg Ser Val Val Arg Arg Ile Gly Thr Asn Leu Pro	
18 23 28 33	

ttg aag ccg tgt gcc cgg gcg tcc ttt gag acc ctg ccc aac atc tct	321
Leu Lys Pro Cys Ala Arg Ala Ser Phe Glu Thr Leu Pro Asn Ile Ser	
34 39 44 49	
gac ctg tgt ttg aga gat gtg ccc cca gtc cct acc ctg gct gac atc	369
Asp Leu Cys Leu Arg Asp Val Pro Pro Val Pro Thr Leu Ala Asp Ile	
50 55 60 65	
gcc tgg att gct gcg gat gaa gag gag aca tat gcc cgg gtc agg agt	417
Ala Trp Ile Ala Ala Asp Glu Glu Glu Thr Tyr Ala Arg Val Arg Ser	
66 71 76 81	
gat acg cgc ccc ctg agg cac acc tgg aaa ccc agc cct ctg att gtc	465
Asp Thr Arg Pro Leu Arg His Thr Trp Lys Pro Ser Pro Leu Ile Val	
82 87 92 97	
atg cag cgc aat gcc tct gtt ccc aac ctg cgt ggg tcc gag gag agg	513
Met Gln Arg Asn Ala Ser Val Pro Asn Leu Arg Gly Ser Glu Glu Arg	
98 103 108 113	
ctt ctg gcc ctg aag aag cca gct ctg cca gcc cta agc cgc act act	561
Leu Leu Ala Leu Lys Lys Pro Ala Leu Pro Ala Leu Ser Arg Thr Thr	
114 119 124 129	
gag ctg cag gac gag ctg agc cac ttg cgc agc cag att gca aag ata	609
Glu Leu Gln Asp Glu Leu Ser His Leu Arg Ser Gln Ile Ala Lys Ile	
130 135 140 145	
gtg gca gct gat gca gct tcg gct tca tta acg cca gat ttc tta tct	657
Val Ala Ala Asp Ala Ala Ser Ala Ser Leu Thr Pro Asp Phe Leu Ser	
146 151 156 161	
cca gga agt tca aat gtc tct tct ccc tta cct tgt ttt gga tcc tca	705
Pro Gly Ser Ser Asn Val Ser Ser Pro Leu Pro Cys Phe Gly Ser Ser	
162 167 172 177	
ttc cac tct aca act tcc ttt gtc att agt gac atc acc gag gag aca	753
Phe His Ser Thr Thr Ser Phe Val Ile Ser Asp Ile Thr Glu Glu Thr	
178 183 188 193	
gag gtg gag gtc cct gag ctt cca tca gtc ccc ctg ctt tgt tct gcc	801
Glu Val Glu Val Pro Glu Leu Pro Ser Val Pro Leu Leu Cys Ser Ala	
194 199 204 209	
agc cct gaa tgt tgc aaa cca gaa cac aaa gct gcc tgc agt tcg tct	849
Ser Pro Glu Cys Cys Lys Pro Glu His Lys Ala Ala Cys Ser Ser Ser	
210 215 220 225	
gaa gag gat gac tgc gtc tct ttg tcc aag gcc agc agc ttt gca gac	897
Glu Glu Asp Asp Cys Val Ser Leu Ser Lys Ala Ser Ser Phe Ala Asp	
226 231 236 241	
atg atg ggt atc ctg aag gac ttt cac cga atg aaa cag agt caa gat	945
Met Met Gly Ile Leu Lys Asp Phe His Arg Met Lys Gln Ser Gln Asp	
242 247 252 257	

ctg aac cgg agt tta ttg aag gag gaa gac cct gct gtg ctt atc tct	993
Leu Asn Arg Ser Leu Leu Lys Glu Glu Asp Pro Ala Val Leu Ile Ser	
258 263 268 273	
 gag gtc cta agg agg aag ttt gct cta aag gaa gaa gat atc agt aga	1041
Glu Val Leu Arg Arg Lys Phe Ala Leu Lys Glu Glu Asp Ile Ser Arg	
274 279 284 289	
 aaa gga aat tga caa cccctcagctc tgcaaactca gtctcatgct cctggaatac	1096
Lys Gly Asn *	
290	
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cagacttcaa accctagcag aagctaaggc ttgtgatttg acctgagaca tttgtttcag	1276
gtaatcgtgt agaatgaagt atcttagttt aaagggttaag agagaagttg tttctggttt	1336
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agctggtctc acaagacact ttgtgcccag ctgtcactca ctctcagcag cttccttgca	1456
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tccttgtcta gatgtagagg tcaggctgct gaaccagcca acacatgggc tactgctggg	1636
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tccacggccc tgaggcctta tcagttccac tgattaaaaa ctttctcttc cacggacttt	1756
aagcccggta ggaaagagag aggaggaggg ggaaagagca aaccatcttt cttccaggcc	1816
cttgactgct cctttgggct gggccaaggt ttgtatgtac cacaccatgc atgactcaga	1876
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 atg gcg gct gcc agg ccc agc ctg ggc cga gtc ctc cca gga tcc tct 227
 Met Ala Ala Ala Arg Pro Ser Leu Gly Arg Val Leu Pro Gly Ser Ser
 1 5 10 15
 gtc ctg ttc ctg tgt gac atg cag gag aag ttc cgc cac aac atc gcc 275
 Val Leu Phe Leu Cys Asp Met Gln Glu Lys Phe Arg His Asn Ile Ala
 17 22 27 32
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 Tyr Phe Pro Gln Ile Val Ser Val Ala Ala Arg Met Leu Lys Asn Thr
 33 38 43 48
 acc ctg gac ctc cta gac cgg ggg ctg cag gtc cat gtg gtg gtg gac 371
 Thr Leu Asp Leu Leu Asp Arg Gly Leu Gln Val His Val Val Val Asp
 49 54 59 64
 gcc tgc tcc tca cgc agc cag gtg gac cgg ctg gtg gct ctg gcc cgc 419
 Ala Cys Ser Ser Arg Ser Gln Val Asp Arg Leu Val Ala Leu Ala Arg
 65 70 75 80
 atg aga cag agt ggt gcc ttc ctc tcc acc agc gaa ggg ctc att ctg 467
 Met Arg Gln Ser Gly Ala Phe Leu Ser Thr Ser Glu Gly Leu Ile Leu
 81 86 91 96
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 Gln Leu Val Gly Asp Ala Val His Pro Gln Phe Lys Glu Ile Gln Lys
 97 102 107 112
 ctc atc aag gag ccc gcc cca gac agc gga ctg ctg ggc ctc ttc caa 563
 Leu Ile Lys Glu Pro Ala Pro Asp Ser Gly Leu Leu Gly Leu Phe Gln
 113 118 123 128
 ggc cag aac tcc ctc ctc cac tga actccaaccc tgccttgagg gaagaccacc 617
 Gly Gln Asn Ser Leu Leu His *
 129 134
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Pro Gly Thr Glu Gly Gln Gln Gln Val His Gly Glu Lys Lys Glu Ala
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Glu Gly Met Lys Ala Gly Ala Phe Pro Pro Ala Pro Thr Ala Val Pro
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Asp Asn Gly Phe Pro Thr Gly Asp His Glu Leu Phe Thr Thr Phe Ser
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Trp Asp Asp Gln Lys Val Arg Arg Val Phe Val Arg Lys Val Tyr Thr
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atc ctg ctg att cag ctg ctg gtg acc ttg gct gtc gtg gct ctc ttt 565
Ile Leu Leu Ile Gln Leu Leu Val Thr Leu Ala Val Val Ala Leu Phe
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Thr Phe Cys Asp Pro Val Lys Asp Tyr Val Gln Ala Asn Pro Gly Trp
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tac tgg gca tcc tat gct gtg ttc ttt gca acc tac ctg acc ctg gct 661
Tyr Trp Ala Ser Tyr Ala Val Phe Phe Ala Thr Tyr Leu Thr Leu Ala
141 146 151 156
tgc tgt tct gga ccc agg agg cat ttc ccc tgg aac ctg att ctc ctg 709
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gagggcagct gttccactg gctctgctga cttgtgcct tggacggctg tcctcagcga 180
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Met Gly Leu Leu Ala Phe Leu
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aag acc cag ttc gtg ctg cac ctg ctg gtc ggc ttt gtc ttc gtg gtg 279
Lys Thr Gln Phe Val Leu His Leu Leu Val Gly Phe Val Phe Val Val
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agt ggt ctg gtc atc aac ttc gtc cag ctg tgc acg ctg gcg ctc tgg 327
Ser Gly Leu Val Ile Asn Phe Val Gln Leu Cys Thr Leu Ala Leu Trp
24 29 34 39
ccg gtc agc aag cag ctc tac cgc cgc ctc aac tgc cgc ctc gcc tac 375
Pro Val Ser Lys Gln Leu Tyr Arg Arg Leu Asn Cys Arg Leu Ala Tyr
40 45 50 55
tca ctc tgg agc caa ctg gtc atg ctg ctg gag tgg tgg tcc tgc acg 423
Ser Leu Trp Ser Gln Leu Val Met Leu Leu Glu Trp Trp Ser Cys Thr
56 61 66 71
gag tgt aca ctg ttc acg gac cag gcc acg gta gag cgc ttt ggg aag 471
Glu Cys Thr Leu Phe Thr Asp Gln Ala Thr Val Glu Arg Phe Gly Lys
72 77 82 87
gag cac gca gtc atc atc ctc aac cac aac ttc gag atc gac ttc ctc 519
Glu His Ala Val Ile Ile Leu Asn His Asn Phe Glu Ile Asp Phe Leu
88 93 98 103
tgt ggg tgg acc atg tgt gag cgc ttc gga gtg ctg ggg agc tcc aag 567
Cys Gly Trp Thr Met Cys Glu Arg Phe Gly Val Leu Gly Ser Ser Lys
104 109 114 119
gtc ctc gct aag aag gag ctg ctc tac gtg ccc ctc atc ggc tgg acg 615
Val Leu Ala Lys Lys Glu Leu Leu Tyr Val Pro Leu Ile Gly Trp Thr
120 125 130 135
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Trp Tyr Phe Leu Glu Ile Val Phe Cys Lys Arg Lys Trp Glu Glu Asp
136 141 146 151
cgg gac acc gtg gtc gaa ggg ctg agg cgc ctg tcg gac tac ccc gag 711
Arg Asp Thr Val Val Glu Gly Leu Arg Arg Leu Ser Asp Tyr Pro Glu
152 157 162 167
tac atg tgg ttt ctc ctg tac tgc gag ggg acg cgc ttc acg gag acc 759
Tyr Met Trp Phe Leu Leu Tyr Cys Glu Gly Thr Arg Phe Thr Glu Thr
168 173 178 183
aag cac cgc gtt agc atg gag gtg gcg gct gct aag ggg ctt cct gtc 807

Lys His Arg Val Ser Met Glu Val Ala Ala Ala Lys Gly Leu Pro Val	
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Leu Lys Tyr His Leu Leu Pro Arg Thr Lys Gly Phe Thr Thr Ala Val	
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aag tgc ctc cgg ggg aca gtc gca gct gtc tat gat gta acc ctg aac	903
Lys Cys Leu Arg Gly Thr Val Ala Ala Val Tyr Asp Val Thr Leu Asn	
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ttc aga gga aac aag aac ccg tcc ctg ctg ggg atc ctc tac ggg aag	951
Phe Arg Gly Asn Lys Asn Pro Ser Leu Leu Gly Ile Leu Tyr Gly Lys	
232 237 242 247	
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Lys Tyr Glu Ala Asp Met Cys Val Arg Arg Phe Pro Leu Glu Asp Ile	
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ccg ctg gat gaa aag gaa gca gct cag tgg ctt cat aaa ctg tac cag	1047
Pro Leu Asp Glu Lys Glu Ala Ala Gln Trp Leu His Lys Leu Tyr Gln	
264 269 274 279	
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280 285 290 295	
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Gly Glu Gln Phe Lys Pro Ala Arg Arg Pro Trp Thr Leu Leu Asn Phe	
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Leu Ser Trp Ala Thr Ile Leu Leu Ser Pro Leu Phe Ser Phe Val Leu	
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Gly Val Phe Ala Ser Gly Ser Pro Leu Leu Ile Leu Thr Phe Leu Gly	
328 333 338 343	
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Phe Val Gly Ala Gly Asn Gly His Cys Arg *	
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Ser Leu Gly Glu Pro Asp Leu Leu Ala Pro Gly Val Gln Cys Glu Gln	
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Thr Asp Arg Phe Asn Val Phe Leu Leu Pro Cys Pro Asn Leu Asp Val	
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tat ggc gag tgc aag ctg cag atc acc cac gag aac atc tac ctc tgg	834
Tyr Gly Glu Cys Lys Leu Gln Ile Thr His Glu Asn Ile Tyr Leu Trp	
152 157 162 167	
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Asp Ile His Asn Pro Arg Val Lys Leu Val Ser Trp Pro Leu Cys Ser	
168 173 178 183	
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Leu Arg Arg Tyr Gly Arg Asp Ala Thr Arg Phe Thr Phe Glu Ala Gly	
184 189 194 199	
cgg atg tgt gat gct ggg gaa gga ctc tat acc ttc cag aca caa gag	978
Arg Met Cys Asp Ala Gly Glu Gly Leu Tyr Thr Phe Gln Thr Gln Glu	
200 205 210 215	
ggg gag cag att tac cag cgc gtc cac agt gcc acc ctg gcc atc gca	1026
Gly Glu Gln Ile Tyr Gln Arg Val His Ser Ala Thr Leu Ala Ile Ala	
216 221 226 231	
gag cag cac aag cgg gtc ctg ctg gaa atg gag aag aac gtg agg ctg	1074
Glu Gln His Lys Arg Val Leu Leu Glu Met Glu Lys Asn Val Arg Leu	
232 237 242 247	
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Leu Asn Lys Gly Thr Glu His Tyr Ser Tyr Pro Cys Thr Pro Thr Thr	
248 253 258 263	
atg ctg ccg cgc agt gcc tac tgg cac cac atc act ggt tcc cag aac	1170
Met Leu Pro Arg Ser Ala Tyr Trp His His Ile Thr Gly Ser Gln Asn	
264 269 274 279	
atc gcc gaa gcc tcc agc tat gct ggt gag ggg tat ggg gca gcc cag	1218
Ile Ala Glu Ala Ser Ser Tyr Ala Gly Glu Gly Tyr Gly Ala Ala Gln	
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Ala Ser Ser Glu Thr Asp Leu Leu Asn Arg Phe Ile Leu Leu Lys Pro	
296 301 306 311	
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Lys Pro Ser Gln Gly Asp Ser Ser Glu Ala Lys Thr Pro Ser Gln *	
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 gct ctg gag gta ggc aca ggt ttt acc cct ctt tct gga gcc cgt gct 96
 Ala Leu Glu Val Gly Thr Gly Phe Thr Pro Leu Ser Gly Ala Arg Ala
 17 22 27 32
 aac ttc ttc cat gaa gct tct tgt gat tac acc agc cca aca tgc gat 144
 Asn Phe Phe His Glu Ala Ser Cys Asp Tyr Thr Ser Pro Thr Cys Asp
 33 38 43 48
 atg gtc aca gca tgg gat ggt ggt cag gac cct ttg atg gtt gag gag 192
 Met Val Thr Ala Trp Asp Gly Gly Gln Asp Pro Leu Met Val Glu Glu
 49 54 59 64
 atg aag acc cag aaa ggc aag ggg ttt ggc cta ggg agc ctg gca att 240
 Met Lys Thr Gln Lys Gly Lys Gly Phe Gly Leu Gly Ser Leu Ala Ile
 65 70 75 80
 gat tgg tcc cca gcc aga agc agt gaa gct tct cat gac agc cct ggg 288
 Asp Trp Ser Pro Ala Arg Ser Ser Glu Ala Ser His Asp Ser Pro Gly
 81 86 91 96
 gat gag atg ggt aga tgg gag ctg ggt agc agc aca ggg tgt tgc ctt 336
 Asp Glu Met Gly Arg Trp Glu Leu Gly Ser Ser Thr Gly Cys Cys Leu

97	102	107	112	
tgg cag tat gat cgc cac aca cac cac atc tat gtt cca gcc agt ggg				384
Trp Gln Tyr Asp Arg His Thr His His Ile Tyr Val Pro Ala Ser Gly				
113	118	123	128	
aag ggg gag ggg aaa ggg agg gga ggg cat gct tct ctc ttt cag ggc				432
Lys Gly Glu Gly Lys Gly Arg Gly Gly His Ala Ser Leu Phe Gln Gly				
129	134	139	144	
atg acc cag aag ctg tac aca tca gtg tac aca ttg cat ggc cac act				480
Met Thr Gln Lys Leu Tyr Thr Ser Val Tyr Thr Leu His Gly His Thr				
145	150	155	160	
cag ctg caa gtt aac agt ggt tct gac ggt gag tgc agt gcc aat gat				528
Gln Leu Gln Val Asn Ser Gly Ser Asp Gly Glu Cys Ser Ala Asn Asp				
161	166	171	176	
gga gat ggt ggt ggt gct ggt gtt gac cat aag atg gca gtt atg gtg				576
Gly Asp Gly Gly Gly Ala Gly Val Asp His Lys Met Ala Val Met Val				
177	182	187	192	
gtg gta gtg gtg aca ctg ttg gtg atg atg act tat gat ggg tgg gat				624
Val Val Val Val Thr Leu Leu Val Met Met Thr Tyr Asp Gly Trp Asp				
193	198	203	208	
gtc tgt gtg gtc aca gag tac ctg tgg gag ggc aat tct gac ccc aag				672
Val Cys Val Val Thr Glu Tyr Leu Trp Glu Gly Asn Ser Asp Pro Lys				
209	214	219	224	
gta gga agc agt gat ccg gta att cca ggc acc aag gca gat aaa aag				720
Val Gly Ser Ser Asp Pro Val Ile Pro Gly Thr Lys Ala Asp Lys Lys				
225	230	235	240	
acc aag atg ggg ccc atg agt gag gag gac aag aga gaa agg aga agt				768
Thr Lys Met Gly Pro Met Ser Glu Glu Asp Lys Arg Glu Arg Arg Ser				
241	246	251	256	
ttg ggt gta aat ccc aga gat tgt tca tca ttg gat gac agt tct cca				816
Leu Gly Val Asn Pro Arg Asp Cys Ser Ser Leu Asp Asp Ser Ser Pro				
257	262	267	272	
tca ggg tct gca gtc ctc tac cct gga ctt gct gca tcc tgg agc ccc				864
Ser Gly Ser Ala Val Leu Tyr Pro Gly Leu Ala Ala Ser Trp Ser Pro				
273	278	283	288	
cag cag tca ggt acc ggc tct cag aac tgc ctg cat ccc att ggc ctg				912
Gln Gln Ser Gly Thr Gly Ser Gln Asn Cys Leu His Pro Ile Gly Leu				
289	294	299	304	
agc tgc tgt ctg cca ggg ctg ctg gca gga ctt atc agt ccc tgc tct				960
Ser Cys Cys Leu Pro Gly Leu Leu Ala Gly Leu Ile Ser Pro Cys Ser				
305	310	315	320	
tcc gac ccc aca aag ctc agt tac tgc gtc att gct act tac cag ggg				1008
Ser Asp Pro Thr Lys Leu Ser Tyr Cys Val Ile Ala Thr Tyr Gln Gly				
321	326	331	336	

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Glu Lys Gln Arg Leu Ser Thr Ala Ser Gly Pro Gln Gly Arg Val Phe	
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ccc cct caa aag ctg ctg cca ttg gag atg cag gag agg aag cca agt	1104
Pro Pro Gln Lys Leu Leu Pro Leu Glu Met Gln Glu Arg Lys Pro Ser	
353 358 363 368	
ggg ccc agg agg gac cgg atg att cgg gac tct atg ctg gat gtg aag	1152
Gly Pro Arg Arg Asp Arg Met Ile Arg Asp Ser Met Leu Asp Val Lys	
369 374 379 384	
acc cag aaa tgt ttc aga att aga ctc ttt ctc ctc aac gac cca cag	1200
Thr Gln Lys Cys Phe Arg Ile Arg Leu Phe Leu Leu Asn Asp Pro Gln	
385 390 395 400	
tct cgg gag aga aga cag att ctt cat caa gtc aga gag ctc agg ggt	1248
Ser Arg Glu Arg Arg Gln Ile Leu His Gln Val Arg Glu Leu Arg Gly	
401 406 411 416	
cct gaa gga gcc ctg gag gtc cag gtc cct gaa gac cca gtg gtg gca	1296
Pro Glu Gly Ala Leu Glu Val Gln Val Pro Glu Asp Pro Val Val Ala	
417 422 427 432	
ctg gtg ggc acc gat gcc acc ctg tgc tgc tcc ttc tcc cct gag cct	1344
Leu Val Gly Thr Asp Ala Thr Leu Cys Cys Ser Phe Ser Pro Glu Pro	
433 438 443 448	
ggc ttc agc ctg gca cag ctc aac ctc atc tgg cag ctg aca gat acc	1392
Gly Phe Ser Leu Ala Gln Leu Asn Leu Ile Trp Gln Leu Thr Asp Thr	
449 454 459 464	
aaa cag ctg gtg cac agc ttt gct gag ggc cag gac cag ggc agc gcc	1440
Lys Gln Leu Val His Ser Phe Ala Glu Gly Gln Asp Gln Gly Ser Ala	
465 470 475 480	
tat gcc aac cgc acg gcc ctc ttc ccg gac ctg ctg gca cag ggc aac	1488
Tyr Ala Asn Arg Thr Ala Leu Phe Pro Asp Leu Leu Ala Gln Gly Asn	
481 486 491 496	
gca tcc ctg agg ctg cag cgc gtg cgt gtg gcg gac gag ggc agc ttc	1536
Ala Ser Leu Arg Leu Gln Arg Val Arg Val Ala Asp Glu Gly Ser Phe	
497 502 507 512	
acc tgc ttc gtg agc atc cgg gat ttc ggc agc gct gcc gtc agc ctg	1584
Thr Cys Phe Val Ser Ile Arg Asp Phe Gly Ser Ala Ala Val Ser Leu	
513 518 523 528	
cag gtg gcc gct ccc tac tcg aag ccc agc atg acc ctg gag ccc aac	1632
Gln Val Ala Ala Pro Tyr Ser Lys Pro Ser Met Thr Leu Glu Pro Asn	
529 534 539 544	
aag gac ctg cgg cca ggg gac acg gtg acc atc acg tgc tcc agc tac	1680
Lys Asp Leu Arg Pro Gly Asp Thr Val Thr Ile Thr Cys Ser Ser Tyr	
545 550 555 560	

cag ggc tac cct gag gct gag gtg ttc tgg cag gat ggg cag ggt gtg	1728
Gln Gly Tyr Pro Glu Ala Glu Val Phe Trp Gln Asp Gly Gln Gly Val	
561 566 571 576	
ccc ctg act ggc aac gtg acc acg tcg cag atg gcc aac gag cag ggc	1776
Pro Leu Thr Gly Asn Val Thr Thr Ser Gln Met Ala Asn Glu Gln Gly	
577 582 587 592	
ttg ttt gat gtg cac agc atc ctg cgg gtg gtg ctg ggt gca aat ggc	1824
Leu Phe Asp Val His Ser Ile Leu Arg Val Val Leu Gly Ala Asn Gly	
593 598 603 608	
acc tac agc tgc ctg gtg cgc aac ccc gtg ctg cag cag gat gcg cac	1872
Thr Tyr Ser Cys Leu Val Arg Asn Pro Val Leu Gln Gln Asp Ala His	
609 614 619 624	
agc tct gtc acc atc aca ccc cag aga agc ccc aca gga gcc gtg gag	1920
Ser Ser Val Thr Ile Thr Pro Gln Arg Ser Pro Thr Gly Ala Val Glu	
625 630 635 640	
gtc cag gtc cct gag gac ccg gtg gtg gcc cta gtg ggc acc gat gcc	1968
Val Gln Val Pro Glu Asp Pro Val Val Ala Leu Val Gly Thr Asp Ala	
641 646 651 656	
acc ctg cgc tgc tcc ttc tcc ccc gag cct ggc ttc agc ctg gca cag	2016
Thr Leu Arg Cys Ser Phe Ser Pro Glu Pro Gly Phe Ser Leu Ala Gln	
657 662 667 672	
ctc aac ctc atc tgg cag ctg aca gac acc aaa cag ctg gtg cac agt	2064
Leu Asn Leu Ile Trp Gln Leu Thr Asp Thr Lys Gln Leu Val His Ser	
673 678 683 688	
ttc acc gaa ggc cgg gac cag ggc agc gcc tat gcc aac cgc acg gcc	2112
Phe Thr Glu Gly Arg Asp Gln Gly Ser Ala Tyr Ala Asn Arg Thr Ala	
689 694 699 704	
ctc ttc ccg gac ctg ctg gca caa ggc aat gca tcc ctg agg ctg cag	2160
Leu Phe Pro Asp Leu Leu Ala Gln Gly Asn Ala Ser Leu Arg Leu Gln	
705 710 715 720	
cgc gtg cgt gtg gcg gac gag ggc agc ttc acc tgc ttc gtg agc atc	2208
Arg Val Arg Val Ala Asp Glu Gly Ser Phe Thr Cys Phe Val Ser Ile	
721 726 731 736	
cgg gat ttc ggc agc gct gcc gtc agc ctg cag gtg gcc gct ccc tac	2256
Arg Asp Phe Gly Ser Ala Ala Val Ser Leu Gln Val Ala Ala Pro Tyr	
737 742 747 752	
tcg aag ccc agc atg acc ctg gag ccc aac aag gac ctg cgg cca ggg	2304
Ser Lys Pro Ser Met Thr Leu Glu Pro Asn Lys Asp Leu Arg Pro Gly	
753 758 763 768	
gac acg gtg acc atc acg tgc tcc agc tac cgg ggc tac cct gag gct	2352
Asp Thr Val Thr Ile Thr Cys Ser Ser Tyr Arg Gly Tyr Pro Glu Ala	
769 774 779 784	
gag gtg ttc tgg cag gat ggg cag ggt gtg ccc ctg act ggc aac gtg	2400

Glu Val Phe Trp Gln Asp Gly Gln Gly Val Pro Leu Thr Gly Asn Val	
785 790 795 800	
acc acg tcg cag atg gcc aac gag cag ggc ttg ttt gat gtg cac agc	2448
Thr Thr Ser Gln Met Ala Asn Glu Gln Gly Leu Phe Asp Val His Ser	
801 806 811 816	
gtc ctg cgg gtg gtg ctg ggt gcg aat ggc acc tac agc tgc ctg gtg	2496
Val Leu Arg Val Val Leu Gly Ala Asn Gly Thr Tyr Ser Cys Leu Val	
817 822 827 832	
cgc aac ccc gtg ctg cag cag gat gcg cac ggc tct gtc acc atc aca	2544
Arg Asn Pro Val Leu Gln Gln Asp Ala His Gly Ser Val Thr Ile Thr	
833 838 843 848	
ggg cag cct atg aca ttc ccc cca gag gcc ctg tgg gtg acc gtg ggg	2592
Gly Gln Pro Met Thr Phe Pro Pro Glu Ala Leu Trp Val Thr Val Gly	
849 854 859 864	
ctg tct gtc tgt ctc att gca ctg ctg gtg gcc ctg gct ttc gtg tgc	2640
Leu Ser Val Cys Leu Ile Ala Leu Leu Val Ala Leu Ala Phe Val Cys	
865 870 875 880	
tgg aga aag atc aaa cag agc tgt gag gag gag aat gca gga gct gag	2688
Trp Arg Lys Ile Lys Gln Ser Cys Glu Glu Glu Asn Ala Gly Ala Glu	
881 886 891 896	
gac cag gat ggg gag gga gaa ggc tcc aag aca gat ggc aag cta tgc	2736
Asp Gln Asp Gly Glu Gly Glu Gly Ser Lys Thr Asp Gly Lys Leu Cys	
897 902 907 912	
agt aga aat ttc gtg act gtg gag tct tat tct cac tgg gct ctg acc	2784
Ser Arg Asn Phe Val Thr Val Glu Ser Tyr Ser His Trp Ala Leu Thr	
913 918 923 928	
ctg att cct gag gct tcc aag ggt tct ctg gag ctg gat gag caa gat	2832
Leu Ile Pro Glu Ala Ser Lys Gly Ser Leu Glu Leu Asp Glu Gln Asp	
929 934 939 944	
gtc tgc agt gaa ggg aca gag gaa ttg agg cca agc tac tgg gga ggg	2880
Val Cys Ser Glu Gly Thr Glu Glu Leu Arg Pro Ser Tyr Trp Gly Gly	
945 950 955 960	
gtg gaa atg cca ttc tgg agg atc tgt gac gtt gac aga gac ttt atc	2928
Val Glu Met Pro Phe Trp Arg Ile Cys Asp Val Asp Arg Asp Phe Ile	
961 966 971 976	
gac aca aca agc cag cta acc cct aac gaa cgt gtt gat tca ttc att	2976
Asp Thr Thr Ser Gln Leu Thr Pro Asn Glu Arg Val Asp Ser Phe Ile	
977 982 987 992	
cat tcc atc agt tac tcc aac atg tgg gac tgc atg gtt gtg aaa aca	3024
His Ser Ile Ser Tyr Ser Asn Met Trp Asp Cys Met Val Val Lys Thr	
993 998 1003 1008	
gaa tat gac ctt gta aaa gga gaa gcc ttg ggc cct tga	3063
Glu Tyr Asp Leu Val Lys Gly Glu Ala Leu Gly Pro *	

1009

1014

1019

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cggatccact agtccagtgt ggtggaattc cggag atg gag gat ttg ctc gac 113
 Met Glu Asp Leu Leu Asp
 1

ttg gac gag gag ctt cgc tac agc ttg gct acc tcc agg gcc aag atg 161
 Leu Asp Glu Glu Leu Arg Tyr Ser Leu Ala Thr Ser Arg Ala Lys Met
 7 12 17 22

ggt cgc cga gct caa cag gag tca gcg cag gcc gag aat cac ctc aat 209
 Gly Arg Arg Ala Gln Gln Glu Ser Ala Gln Ala Glu Asn His Leu Asn
 23 28 33 38

ggc aag aat tcc tct ttg act ctg act gga gag act tcc tct gct aaa 257
 Gly Lys Asn Ser Ser Leu Thr Leu Thr Gly Glu Thr Ser Ser Ala Lys
 39 44 49 54

tta cct cgc tgc cga cag gga ggc tgg gca ggt gat tcc gtg aag gct 305
 Leu Pro Arg Cys Arg Gln Gly Gly Trp Ala Gly Asp Ser Val Lys Ala
 55 60 65 70

tcg aag ttt agg agg aag gct tct gaa gaa ata gaa gat ttc cgc ctc 353
 Ser Lys Phe Arg Arg Lys Ala Ser Glu Glu Ile Glu Asp Phe Arg Leu
 71 76 81 86

aga cca cag agc ctg aat gga tca gat tat gga gga gat att cct atc 401
 Arg Pro Gln Ser Leu Asn Gly Ser Asp Tyr Gly Gly Asp Ile Pro Ile
 87 92 97 102

att ccg gat ctg gag gaa gta cag gaa gaa gac ttt gtt ttg cag gtg 449
 Ile Pro Asp Leu Glu Glu Val Gln Glu Glu Asp Phe Val Leu Gln Val
 103 108 113 118

gca gcc cct ccc agc atc cag ata aag cgg gtg atg acc tac cgt gac 497
 Ala Ala Pro Pro Ser Ile Gln Ile Lys Arg Val Met Thr Tyr Arg Asp
 119 124 129 134

ctg gac aat gac ctc atg aag tac tca gcc att cag aca ctg gat ggg 545
 Leu Asp Asn Asp Leu Met Lys Tyr Ser Ala Ile Gln Thr Leu Asp Gly
 135 140 145 150

gag atc gac ctg aaa ctc ctc acc aaa gtg ctc gcg ccg gag cac gaa	593
Glu Ile Asp Leu Lys Leu Leu Thr Lys Val Leu Ala Pro Glu His Glu	
151 156 161 166	

gtc cgg gag cga aac cct tct tgg cag gat gat gtc ggc tgg gac tgg	641
Val Arg Glu Arg Asn Pro Ser Trp Gln Asp Asp Val Gly Trp Asp Trp	
167 172 177 182	

gac cat ctg ttc act gag gtg tcc tca gag gtc ctc act gag tgg gac	689
Asp His Leu Phe Thr Glu Val Ser Ser Glu Val Leu Thr Glu Trp Asp	
183 188 193 198	

cca ctg cag acg gag aag gag gac cct gcg ggg cag gcc agg cac acc	737
Pro Leu Gln Thr Glu Lys Glu Asp Pro Ala Gly Gln Ala Arg His Thr	
199 204 209 214	

tga gccc gtcacccatg ctctagacat gaagaaatgc aatgagctta aagctaaaga	794
* 215	

agcttgtaag cagctccgaa tttttacctg gaatatcttg taataaaaaat atttatattc	854
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agtcaaccac attggataat tcaattgcaa taaattgctt attctgtgcc atctccaaaa	914
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aaaaaaaa	922
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agcttgaggt ctcggcgtcc gcgtcctgcg gtgccctggg gtctcccgag gaccttgtag	180
ccgcgcgggtt tccttgggct ggctttggac gacgctttcg ccttctgct gcctaggatc	240
cgccgac atg aat ccc atc gta gtg gtc cac ggc ggc gga gcc ggt ccc	289
Met Asn Pro Ile Val Val Val His Gly Gly Gly Ala Gly Pro	
1 5 10	

atc tcc aag gat cgg aag gag cga gtg cac cag ggc atg gtc aga gcc	337
Ile Ser Lys Asp Arg Lys Glu Arg Val His Gln Gly Met Val Arg Ala	
15 20 25 30	

gcc acc gtg ggc tac ggc atc ctc cgg gag ggc ggg agc gcc gtg gat	385
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Ala 31	Thr	Val	Gly	Tyr	Gly 36	Ile	Leu	Arg	Glu	Gly 41	Gly	Ser	Ala	Val	Asp 46	
gcc Ala 47	gta Val	gag Glu	gga Gly	gct Ala	gtc Val 52	gtc Val	gcc Ala	ctg Leu	gaa Glu	gac Asp 57	gat Asp	ccc Pro	gag Glu	ttc Phe	aac Asn 62	433
gca Ala 63	ggg Gly	tgt Cys	ggg Gly	tct Ser	gtc Val 68	ttg Leu	aac Asn	aca Thr	aat Asn	ggg Gly 73	gag Glu	ggt Val	gaa Glu	atg Met	gat Asp 78	481
gct Ala 79	agt Ser	atc Ile	atg Met	gat Asp	gga Gly 84	aaa Lys	gac Asp	ctg Leu	tct Ser	gca Ala 89	gga Gly 94	gca Ala	gtg Val	tcc Ser	gca Ala 94	529
gtc Val 95	cag Gln	tgt Cys	ata Ile	gca Ala	aat Asn 100	ccc Pro	att Ile	aaa Lys	ctt Leu	gct Ala 105	cgg Arg	ctt Leu	gtc Val	atg Met	gaa Glu 110	577
aag Lys 111	aca Thr	cct Pro	cat His	tgc Cys	ttt Phe 116	ctg Leu	act Thr	gac Asp	caa Gln	ggc Gly 121	gca Ala	gcg Ala	cag Gln	ttt Phe	gca Ala 126	625
gca Ala 127	gct Ala	atg Met	ggg Gly	gtt Val	cca Pro 132	gag Glu	att Ile	cct Pro	gga Gly	gaa Glu 137	aaa Lys	ctg Leu	gtg Val	aca Thr	gag Glu 142	673
aga Arg 143	aac Asn	aaa Lys	aag Lys	cgc Arg	ctg Leu 148	gaa Glu	aaa Lys	gag Glu	aag Lys	cat His 153	gaa Glu	aaa Lys	ggg Gly	gct Ala	cag Gln 158	721
aaa Lys 159	aca Thr	gat Asp	tgt Cys	caa Gln	aaa Lys 164	aac Asn	ttg Leu	gga Gly	acc Thr	gtg Val 169	ggg Gly	gct Ala	gtt Val	gcc Ala	ttg Leu 174	769
gac Asp 175	tgc Cys	aaa Lys	ggg Gly	aat Asn	gta Val 180	gcc Ala	tac Tyr	gca Ala	acc Thr	tcc Ser 185	aca Thr	ggc Gly	ggg Gly	atc Ile	gtt Val 190	817
aat Asn 191	aaa Lys	atg Met	gtc Val	ggc Gly	cgc Arg 196	gtt Val	ggg Gly	gac Asp	tca Ser	ccg Pro 201	tgt Cys	cta Leu	gga Gly	gct Ala	gga Gly 206	865
ggg Gly 207	tat Tyr	gcc Ala	gac Asp	aat Asn	gac Asp 212	atc Ile	gga Gly	gcc Ala	gtc Val	tca Ser 217	acc Thr	aca Thr	ggg Gly	cat His	ggg Gly 222	913
gaa Glu 223	agc Ser	atc Ile	ctg Leu	aag Lys	gtg Val 228	aac Asn	ctg Leu	gct Ala	aga Arg	ctc Leu 233	acc Thr	ctg Leu	ttc Phe	cac His	ata Ile 238	961
gaa Glu 239	caa Gln	gga Gly	aag Lys	acg Thr	gta Val 244	gaa Glu	gag Glu	gct Ala	gcg Ala	gac Asp 249	cta Leu	tcg Ser	ttg Leu	ggg Gly	tat Tyr 254	1009
atg Met	aag Lys	tca Ser	agg Arg	gtt Val	aaa Lys	ggg Gly	tta Leu	ggg Gly	ggc Gly	ctc Leu	atc Ile	gtg Val	gtt Val	agc Ser	aaa Lys	1057

255	260	265	270	
aca gga gac tgg gtg gca aag tgg acc tcc acc tcc atg ccc tgg gca				1105
Thr Gly Asp Trp Val Ala Lys Trp Thr Ser Thr Ser Met Pro Trp Ala				
271	276	281	286	
gcc gcc aag gac ggc aag ctg cac ttc gga att gat cct gac gat act				1153
Ala Ala Lys Asp Gly Lys Leu His Phe Gly Ile Asp Pro Asp Asp Thr				
287	292	297	302	
act atc acc gac ctt ccc taa gc cgctggaaga ttgtattcca gatgctagct				1206
Thr Ile Thr Asp Leu Pro *				
303	308			
tagagggtcaa gtacagtctc ctcattgagac atagcctaata caattagatc tagaattgga				1266
aaaattgtcc cgtctgtcac ttgttttgtt gccttaataa gcatctgaat gtttggttgt				1326
ggggcggtt ctgaagcgat gagagaaatg cccgtattag gaggattact tgagccctgg				1386
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cgccgccac tgcccgcag caggctctgg tctccgctct ccaacagctg aaaggccggc				180
gcagtgaaca cagaaacgaa aaccaagaa atg cct tat tcc aca aac aaa gag				233
		Met Pro Tyr Ser Thr Asn Lys Glu		
	1		5	
ttg ata ctt ggc atc atg gtg ggc act gct gga atc agc ttg ctg ctc				281
Leu Ile Leu Gly Ile Met Val Gly Thr Ala Gly Ile Ser Leu Leu Leu				
9	14	19	24	
ttg tgg tac cac aag gtc cgt aaa cca ggg ata gca atg aag tta cct				329
Leu Trp Tyr His Lys Val Arg Lys Pro Gly Ile Ala Met Lys Leu Pro				
25	30	35	40	
gaa ttt ctt tct ctg ggt aat aca ttt aat tca ata act ttg caa gat				377
Glu Phe Leu Ser Leu Gly Asn Thr Phe Asn Ser Ile Thr Leu Gln Asp				

aaa atc aac tat ggg cac ctc ttc aag gaa cat cta gat ata gca atc	1097
Lys Ile Asn Tyr Gly His Leu Phe Lys Glu His Leu Asp Ile Ala Ile	
281 286 291 296	
aaa ctt tta cca gag gaa ccc ttt cta tat tac ctc aaa ggg aga tac	1145
Lys Leu Leu Pro Glu Glu Pro Phe Leu Tyr Tyr Leu Lys Gly Arg Tyr	
297 302 307 312	
tgc tat act gtc tca aaa ctg agc tgg att gag aaa aaa atg gct gct	1193
Cys Tyr Thr Val Ser Lys Leu Ser Trp Ile Glu Lys Lys Met Ala Ala	
313 318 323 328	
act tct gtt tgg aaa aat acc atc ttc aac tgt aca aga agc ttt aca	1241
Thr Ser Val Trp Lys Asn Thr Ile Phe Asn Cys Thr Arg Ser Phe Thr	
329 334 339 344	
caa ttt cct taa ggc tgaagaacta tgccctgggtt attctaatacc caattacatg	1296
Gln Phe Pro *	
345	
tacttagcaa agtggttatac tgatcttgag gaaaaccaga atgctttgaa gttctgtaat	1356
ttggctttat tgcttcctac tgttaccaa gaggataaag aggcacagaa agagatgcaa	1416
aaaataatga cttccttgaa gaggtaaata aacgaattta ctcttcaaca aatcagatgt	1476
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agggatttgt gcttagattt gaaggtaaag ccatgtttct gcagaatgca ttccactagt	1596
agcactacaa aattaattat gttattttgga gaatctatat actataatgt caatacataa	1656
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Val Arg Gly His Ala Glu Asp Tyr Glu Arg Trp Gln Arg Gln Gly Ala	
4 9 14 19	
cgc ggc tgg gac tac gcg cac tgc ctg ccc tac ttc cgc aag gcg cag	150
Arg Gly Trp Asp Tyr Ala His Cys Leu Pro Tyr Phe Arg Lys Ala Gln	
20 25 30 35	
ggc cac gag ctg ggc gcc agc cgg tac cgg ggc gcc gat ggc ccg ctg	198
Gly His Glu Leu Gly Ala Ser Arg Tyr Arg Gly Ala Asp Gly Pro Leu	
36 41 46 51	
cgg gtg tcc cgg ggc aag acc aac cac ccg ctg cac tgc gca ttc ctg	246
Arg Val Ser Arg Gly Lys Thr Asn His Pro Leu His Cys Ala Phe Leu	
52 57 62 67	
gag gcc acg cag cag gcc ggc tac ccg ctc acc gag gac atg aat ggc	294
Glu Ala Thr Gln Gln Ala Gly Tyr Pro Leu Thr Glu Asp Met Asn Gly	
68 73 78 83	
ttc cag cag gag ggc ttc ggc tgg atg gac atg acc atc cat gaa ggc	342
Phe Gln Gln Glu Gly Phe Gly Trp Met Asp Met Thr Ile His Glu Gly	
84 89 94 99	
aaa cgg tgg agc gcg gcc tgt gcc tac ctg cac cca gca ctg agc cgc	390
Lys Arg Trp Ser Ala Cys Ala Tyr Leu His Pro Ala Leu Ser Arg	
100 105 110 115	
acc aac ctc aag gcc gag gcc gag acg ctt gtg agc agg gtg cta ttt	438
Thr Asn Leu Lys Ala Glu Ala Glu Thr Leu Val Ser Arg Val Leu Phe	
116 121 126 131	
gag ggc acc cgt gca gtg ggc gtg gag tat gtc aag aat ggc cag agc	486
Glu Gly Thr Arg Ala Val Gly Val Glu Tyr Val Lys Asn Gly Gln Ser	
132 137 142 147	
cac agg gct tat gcc agc aag gag gtg att ctg agt gga ggt gcc atc	534
His Arg Ala Tyr Ala Ser Lys Glu Val Ile Leu Ser Gly Gly Ala Ile	
148 153 158 163	
aac tct cca cag ctg ctc atg ctc tct ggc atc ggg aat gct gat gac	582
Asn Ser Pro Gln Leu Leu Met Leu Ser Gly Ile Gly Asn Ala Asp Asp	
164 169 174 179	
ctc aag aaa ctg ggc atc cct gtg gtg tgc cac cta cct ggg gtt ggc	630
Leu Lys Lys Leu Gly Ile Pro Val Val Cys His Leu Pro Gly Val Gly	
180 185 190 195	
cag aac ctg caa gac cac ctg gag atc tac att cag cag gca tgc acc	678
Gln Asn Leu Gln Asp His Leu Glu Ile Tyr Ile Gln Gln Ala Cys Thr	
196 201 206 211	
cgc cct atc acc ctc cat tca gca cag aag ccc ctg cgg aag gtc tgc	726
Arg Pro Ile Thr Leu His Ser Ala Gln Lys Pro Leu Arg Lys Val Cys	
212 217 222 227	

att ggt ctg gag tgg ctc tgg aaa ttc aca ggg gag gga gcc act gcc	774
Ile Gly Leu Glu Trp Leu Trp Lys Phe Thr Gly Glu Gly Ala Thr Ala	
228 233 238 243	
cat ctg gaa aca ggt ggg ttc atc cgc agc cag cct ggg gtc ccc cac	822
His Leu Glu Thr Gly Gly Phe Ile Arg Ser Gln Pro Gly Val Pro His	
244 249 254 259	
ccg gac atc cag ttc cat ttc ctg cca tcc caa gtg att gac cac ggg	870
Pro Asp Ile Gln Phe His Phe Leu Pro Ser Gln Val Ile Asp His Gly	
260 265 270 275	
cgg gtc ccc acc cag cag gag gct tac cag gta cat gtg ggg ccc atg	918
Arg Val Pro Thr Gln Gln Glu Ala Tyr Gln Val His Val Gly Pro Met	
276 281 286 291	
cgg ggc acg agt gtg ggc tgg ctc aaa ctg aga agt gcc aat ccc caa	966
Arg Gly Thr Ser Val Gly Trp Leu Lys Leu Arg Ser Ala Asn Pro Gln	
292 297 302 307	
gac cac cct gtg atc cag ccc aac tac ttg tca aca gaa act gat att	1014
Asp His Pro Val Ile Gln Pro Asn Tyr Leu Ser Thr Glu Thr Asp Ile	
308 313 318 323	
gag gat ttc cgt ctg tgt gtg aag ctc acc aga gaa att ttt gca cag	1062
Glu Asp Phe Arg Leu Cys Val Lys Leu Thr Arg Glu Ile Phe Ala Gln	
324 329 334 339	
gaa gcc ctg gct ccg ttc cga ggg aaa gag ctc cag cca gga agc cac	1110
Glu Ala Leu Ala Pro Phe Arg Gly Lys Glu Leu Gln Pro Gly Ser His	
340 345 350 355	
att cag tca gat aaa gag ata gat gcc ttt gtg cgg gca aaa gcc gac	1158
Ile Gln Ser Asp Lys Glu Ile Asp Ala Phe Val Arg Ala Lys Ala Asp	
356 361 366 371	
agc gcc tac cac ccc tcg tgc acc tgt aag atg ggc cag ccc tcc gat	1206
Ser Ala Tyr His Pro Ser Cys Thr Cys Lys Met Gly Gln Pro Ser Asp	
372 377 382 387	
ccc act gcc gtg gtg gat ccg cag aca agg gtc ctc ggg gtg gaa aac	1254
Pro Thr Ala Val Val Asp Pro Gln Thr Arg Val Leu Gly Val Glu Asn	
388 393 398 403	
ctc agg gtc gtc gat gcc tcc atc atg cct agc atg gtc agc ggc aac	1302
Leu Arg Val Val Asp Ala Ser Ile Met Pro Ser Met Val Ser Gly Asn	
404 409 414 419	
ctg aac gcc ccc aca atc atg atc gca gag aag gca gct gac att atc	1350
Leu Asn Ala Pro Thr Ile Met Ile Ala Glu Lys Ala Ala Asp Ile Ile	
420 425 430 435	
aag ggg cag cct gca ctc tgg gac aaa gat gtc cct gtc tac aag ccc	1398
Lys Gly Gln Pro Ala Leu Trp Asp Lys Asp Val Pro Val Tyr Lys Pro	
436 441 446 451	

agg acg ctg gcc acc cag cgc taa gacagttgct gctggaggat gaccagggaa	1452
Arg Thr Leu Ala Thr Gln Arg *	
452	457
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Gly Asp Ala Gly Ser Glu Arg Ser Lys Ala Pro Ser Leu Pro Pro Arg
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cca agt aca agt aac agc caa tca gat ttg ttt tcc gaa gag acc acc 610
Pro Ser Thr Ser Asn Ser Gln Ser Asp Leu Phe Ser Glu Glu Thr Thr
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agt gac aac aac aat acc tcg ata acc acg cca act ctt agt ccc agc 658
Ser Asp Asn Asn Asn Thr Ser Ile Thr Thr Pro Thr Leu Ser Pro Ser
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cag cag ccg ctt ccg aca gaa ctg aat gta act tca ccg agt aaa gag 706
Gln Gln Pro Leu Pro Thr Glu Leu Asn Val Thr Ser Pro Ser Lys Glu
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gag tat tca cag tct gag aat gag gct tca cca gta aaa cgg cca cga 754
Glu Tyr Ser Gln Ser Glu Asn Glu Ala Ser Pro Val Lys Arg Pro Arg
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cta ctt gag aat acg gaa cgg tcc gag gaa acc agt cga tct aaa cag 802
Leu Leu Glu Asn Thr Glu Arg Ser Glu Glu Thr Ser Arg Ser Lys Gln
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Lys Ser Arg Arg Arg Cys Phe Gln Cys Gln Thr Lys Leu Glu Leu Val
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cag cag gaa ttg gga tcg tgt cgc tgc ggt tat gtg ttc tgt atg tta 898
Gln Gln Glu Leu Gly Ser Cys Arg Cys Gly Tyr Val Phe Cys Met Leu
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cat cgc ctc ccc gag cag cac gac tgc aca ttc gac cac atg ggc cgt 946
His Arg Leu Pro Glu Gln His Asp Cys Thr Phe Asp His Met Gly Arg
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cagccatcct ggtactgtag tttaggggtt gatgggtggtt gaaattgatt tctggctggt	1223
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Ala Ala Ala Ala Pro Thr Ala Thr Val Ser Glu Lys Glu Pro Phe Gly	
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Lys Leu Gln Leu Ser Ser Arg Asp Pro Pro Gly Ser Leu Ser Ala Lys	
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Lys Val Arg Thr Glu Glu Lys Lys Ala Pro Arg Arg Val Asn Gly Glu	
44 49 54 59	
ggg ggc agc ggc ggg aac agc agg cag ctg cag ccg ccg gca gca cct	244
Gly Gly Ser Gly Gly Asn Ser Arg Gln Leu Gln Pro Pro Ala Ala Pro	
60 65 70 75	
tcg cct cag agc tat ggc agc ccc gcg tct tgg agc ttt gcc cct ctg	292
Ser Pro Gln Ser Tyr Gly Ser Pro Ala Ser Trp Ser Phe Ala Pro Leu	
76 81 86 91	
tct gct gct ccc tcc ccg tcc tct tct ccg agc agt ttc tct ttc tcc	340
Ser Ala Ala Pro Ser Pro Ser Ser Ser Arg Ser Ser Phe Ser Phe Ser	
92 97 102 107	
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Ala Gly Thr Ala Val Pro Ser Ser Ala Ser Ala Ser Leu Ser Gln Pro	
108 113 118 123	
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Val Pro Arg Lys Leu Leu Val Pro Pro Thr Leu Leu His Ala Gln Pro	
124 129 134 139	

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His His Leu Leu Leu Pro Ala Ala Ala Ala Ala Ala Ser Ala Asn Ala	
140 145 150 155	
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Lys Ser Arg Arg Pro Lys Glu Lys Arg Glu Lys Glu Arg Arg Arg His	
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Gly Leu Gly Gly Ala Arg Glu Ala Gly Gly Ala Ser Arg Glu Glu Asn	
172 177 182 187	
ggg gag gtg aag ccg ctg ccc cga gca aat gat aaa acc agg agc ttt	628
Gly Glu Val Lys Pro Leu Pro Arg Ala Asn Asp Lys Thr Arg Ser Phe	
188 193 198 203	
gac gat ttt tcg cca gat caa gcg gct gca gaa tgt ttg agc att aga	676
Asp Asp Phe Ser Pro Asp Gln Ala Ala Ala Glu Cys Leu Ser Ile Arg	
204 209 214 219	
aaa agg cga att ctt aag ggt tct tgt cag aca ggt tac ctc cga aaa	724
Lys Arg Arg Ile Leu Lys Gly Ser Cys Gln Thr Gly Tyr Leu Arg Lys	
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Ala Leu Phe Ser Asp Thr Val Thr Leu Gly Ile Lys Ala Ser Thr Tyr	
236 241 246 251	
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Gly Phe Trp Gly Gly Met Ile Gln Ser Ile Val Lys Gly Leu Ala Glu	
252 257 262 267	
acc ttc aac ttc tgg ata cat att tgg gaa ctg aat gac ttg cag tat	868
Thr Phe Asn Phe Trp Ile His Ile Trp Glu Leu Asn Asp Leu Gln Tyr	
268 273 278 283	
att tca gcc ctt ttt gcc tgc tca gaa gag atg ccc gat tat cat tta	916
Ile Ser Ala Leu Phe Ala Cys Ser Glu Glu Met Pro Asp Tyr His Leu	
284 289 294 299	
gaa aaa caa ttg gct gat aaa atc aaa gac aaa att aaa gag aga gac	964
Glu Lys Gln Leu Ala Asp Lys Ile Lys Asp Lys Ile Lys Glu Arg Asp	
300 305 310 315	
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Lys Glu Lys Glu Arg Glu Lys Lys Lys His Lys Val Met Asn Glu Ile	
316 321 326 331	
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Lys Lys Glu Asn Gly Glu Val Lys Ile Leu Leu Lys Ser Gly Lys Glu	
332 337 342 347	
aaa cca aaa aca aat ata gaa gac tta caa att aaa aag gta aag/aag	1108
Lys Pro Lys Thr Asn Ile Glu Asp Leu Gln Ile Lys Lys Val Lys Lys	
348 353 358 363	

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364 369 374 379	
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ata gag cac cag cct aat gga ggt gca tcg gtt atc cat gcc tac agt	1444
Ile Glu His Gln Pro Asn Gly Gly Ala Ser Val Ile His Ala Tyr Ser	
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Asn Glu Leu Ser His Leu Ser Pro Met Glu Met Glu Arg Phe Ala Glu	
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492 497 502 507	
tac gtg atg ggt att gtt cat ggg gca gct act tat tta cct gac ttt	1588
Tyr Val Met Gly Ile Val His Gly Ala Ala Thr Tyr Leu Pro Asp Phe	
508 513 518 523	
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Leu Asp Tyr Phe Ser Phe Asn Phe Pro Asn Ser Pro Val Lys Met Glu	
524 529 534 539	
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Ile Leu Gly Lys Lys Asp Ile Glu Thr Thr Thr Met Ser Asn Phe His	
540 545 550 555	
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Ala Gln Val Lys Arg Thr Tyr Ser His Gly Thr Tyr Arg Ala Gly Pro	
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Met Arg Gln Ile Ser Leu Val Gly Ala Val Asp Glu Glu Val Gly Asp	
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Tyr Phe Pro Glu Phe Leu Asp Met Leu Glu Glu Ser Pro Phe Leu Lys	
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Cys Thr Leu Pro Trp Gly Thr Leu Ser Ser Leu Lys Leu Gln Ser Arg	
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Lys Asp Ser Asp Asp Gly Pro Ile Met Trp Val Arg Pro Gly Glu Gln	
620 625 630 635	
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Met Ile Pro Val Ala Asp Met Pro Lys Ser Pro Phe Lys Arg Lys Arg	
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act acc aat gaa ata aaa aat ctt cag tac cta cct cga aca agt gag	2020
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Met Gln Leu Asp Leu His Glu Pro Pro Leu Ser Gln Cys Val Gln Trp	
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gcc agg att cag cta tat gat aat gac att tat ttt att cca agg aat	2356
Ala Arg Ile Gln Leu Tyr Asp Asn Asp Ile Tyr Phe Ile Pro Arg Asn	
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Leu Asp Ser Val Phe Ser Asp Lys Leu His Ser Lys Tyr Glu Leu Gln				
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cag att aaa cat gaa cct att gca tct gta aga atc aag gaa gaa cct				2644
Gln Ile Lys His Glu Pro Ile Ala Ser Val Arg Ile Lys Glu Glu Pro				
860	865	870	875	
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Gly Lys Asn Val Lys Ala Lys Leu Asp His Val Gln Phe Ala Glu Phe				
892	897	902	907	
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Lys Ile Asp Met Asp Ser Lys Phe Glu Asn Ser Asn Lys Asp Leu Lys				
908	913	918	923	
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Glu Glu Leu Cys Pro Gly Asn Leu Ser Leu Val Asp Thr Arg Gln His				
924	929	934	939	
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Gly Gly Ser Gly Gly Asn Ser Arg Gln Leu Gln Pro Pro Ala Ala Pro	
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Ser Pro Gln Ser Tyr Gly Ser Pro Ala Ser Trp Ser Phe Ala Pro Leu	
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188 193 198 203	
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Gly Lys Glu Lys Pro Lys Thr Asn Ile Glu Asp Leu Gln Ile Lys Lys	

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gta aag aag aaa aag aaa aag aaa cac aaa gag aat gaa aaa cgg aag				820
Val Lys Lys Lys Lys Lys Lys Lys His Lys Glu Asn Glu Lys Arg Lys				
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cgt ccg aaa atg tat agc aaa tct att cag acc atc tgc tca gga ttg				868
Arg Pro Lys Met Tyr Ser Lys Ser Ile Gln Thr Ile Cys Ser Gly Leu				
268	273	278	283	
cta act gat gtt gaa gat caa gca gcc aaa ggc atc cta aat gat aac				916
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284	289	294	299	
ata aaa gat tac gtt ggg aag aat ttg gat acc aag aac tat gat tcc				964
Ile Lys Asp Tyr Val Gly Lys Asn Leu Asp Thr Lys Asn Tyr Asp Ser				
300	305	310	315	
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Lys Ile Pro Glu Asn Ser Glu Phe Pro Phe Val Ser Leu Lys Glu Pro				
316	321	326	331	
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Arg Val Gln Asn Asn Leu Lys Arg Leu Asp Thr Leu Glu Phe Lys Gln				
332	337	342	347	
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Phe Ala Glu Glu Phe Val Gly Leu Val Phe Ser Glu Asn Glu Asn Ser				
380	385	390	395	
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Ala Ala Phe Tyr Val Met Gly Ile Val His Gly Ala Ala Thr Tyr Leu				
396	401	406	411	
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Pro Asp Phe Leu Asp Tyr Phe Ser Phe Asn Phe Pro Asn Ser Pro Val				
412	417	422	427	
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428	433	438	443	
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Asn Phe His Ala Gln Val Lys Arg Thr Tyr Ser His Gly Thr Tyr Arg				
444	449	454	459	
gct ggc cca atg aga caa ata agc ttg gtg gga gca gtt gat gaa gaa				1444
Ala Gly Pro Met Arg Gln Ile Ser Leu Val Gly Ala Val Asp Glu Glu				
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cag agt cga aaa gat agt gat gat ggt ccc atc atg tgg gtt cgt cca Gln Ser Arg Lys Asp Ser Asp Asp Gly Pro Ile Met Trp Val Arg Pro 508 513 518 523	1588
gga gaa caa atg atc cct gtg gct gat atg cca aag tca cct ttc aaa Gly Glu Gln Met Ile Pro Val Ala Asp Met Pro Lys Ser Pro Phe Lys 524 529 534 539	1636
agg aaa aga act acc aat gaa ata aaa aat ctt cag tac cta cct cga Arg Lys Arg Thr Thr Asn Glu Ile Lys Asn Leu Gln Tyr Leu Pro Arg 540 545 550 555	1684
aca agt gag ccc cgt gag atg ctc ttt gaa gac agg aca aga gct cat Thr Ser Glu Pro Arg Glu Met Leu Phe Glu Asp Arg Thr Arg Ala His 556 561 566 571	1732
gca gat cat ata gga caa ggt ttt gaa cga cag act aca gct gct gtt Ala Asp His Ile Gly Gln Gly Phe Glu Arg Gln Thr Thr Ala Ala Val 572 577 582 587	1780
gga gtg ctg aag gct gtg cac tgt gga gag tgg cct gat caa ccc cgt Gly Val Leu Lys Ala Val His Cys Gly Glu Trp Pro Asp Gln Pro Arg 588 593 598 603	1828
ata acc aaa gat gta att tgt ttt cat gct gaa gat ttc tta gaa gta Ile Thr Lys Asp Val Ile Cys Phe His Ala Glu Asp Phe Leu Glu Val 604 609 614 619	1876
gtt caa cga atg cag tta gat tta cat gaa cct cca ctg tcc cag tgt Val Gln Arg Met Gln Leu Asp Leu His Glu Pro Pro Leu Ser Gln Cys 620 625 630 635	1924
gtc caa tgg gtt gat gat gca aaa ctg aat caa ctg agg agg gaa ggc Val Gln Trp Val Asp Asp Ala Lys Leu Asn Gln Leu Arg Arg Glu Gly 636 641 646 651	1972
att cgc tat gcc agg att cag cta tat gat aat gac att tat ttt att Ile Arg Tyr Ala Arg Ile Gln Leu Tyr Asp Asn Asp Ile Tyr Phe Ile 652 657 662 667	2020
cca agg aat gtt gtt cat cag ttc aag aca gtt tca gct gta tgc agt Pro Arg Asn Val Val His Gln Phe Lys Thr Val Ser Ala Val Cys Ser 668 673 678 683	2068
tta gca tgg cat att cgg ctc aaa tta tat cac tca gag gag gac act Leu Ala Trp His Ile Arg Leu Lys Leu Tyr His Ser Glu Glu Asp Thr 684 689 694 699	2116

tct cag aat aca gct act cat gaa aca ggc aca tca tca gat tcc aca	2164
Ser Gln Asn Thr Ala Thr His Glu Thr Gly Thr Ser Ser Asp Ser Thr	
700 705 710 715	
tca tct gtt ctt gga cct cac act gac aac atg att tgt gct gta agc	2212
Ser Ser Val Leu Gly Pro His Thr Asp Asn Met Ile Cys Ala Val Ser	
716 721 726 731	
aaa gcc tcc ttg gat tct gtt ttt tca gat aaa ctt cat tct aaa tat	2260
Lys Ala Ser Leu Asp Ser Val Phe Ser Asp Lys Leu His Ser Lys Tyr	
732 737 742 747	
gaa tta cag cag att aaa cat gaa cct att gca tct gta aga atc aag	2308
Glu Leu Gln Gln Ile Lys His Glu Pro Ile Ala Ser Val Arg Ile Lys	
748 753 758 763	
gaa gaa cct gtg aat gtt aat att cct gaa aag act aca gca ctg aat	2356
Glu Glu Pro Val Asn Val Asn Ile Pro Glu Lys Thr Thr Ala Leu Asn	
764 769 774 779	
aat atg gat ggc aag aat gtt aaa gca aaa ttg gat cat gtt caa ttt	2404
Asn Met Asp Gly Lys Asn Val Lys Ala Lys Leu Asp His Val Gln Phe	
780 785 790 795	
gca gaa ttt aag att gac atg gat tct aaa ttt gaa aat agc aac aaa	2452
Ala Glu Phe Lys Ile Asp Met Asp Ser Lys Phe Glu Asn Ser Asn Lys	
796 801 806 811	
gat tta aag gaa gaa ttg tgc cct gga aat cta agt cta gtt gat aca	2500
Asp Leu Lys Glu Glu Leu Cys Pro Gly Asn Leu Ser Leu Val Asp Thr	
812 817 822 827	
agg caa cac agt tca gca cat tca aat caa gat aaa aaa gac gat gac	2548
Arg Gln His Ser Ser Ala His Ser Asn Gln Asp Lys Lys Asp Asp Asp	
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Ile Leu Cys *	
844	

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cactgaaacc attaggaaaa atccttgtgg ttaacagcag aggcttcaga gtgtaacctg 180
 tactcgggcc tagaaaattat ttaaa atg gcg act gat acg tct caa ggt gaa 232
 Met Ala Thr Asp Thr Ser Gln Gly Glu
 1 5
 ctc gtc cat cct aag gca ctc cca ctt ata gta gga gct cag ctg atc 280
 Leu Val His Pro Lys Ala Leu Pro Leu Ile Val Gly Ala Gln Leu Ile
 10 15 20 25
 cac gcg gac aag tta ggt gag aag gta gaa gat agc acc atg ccg att 328
 His Ala Asp Lys Leu Gly Glu Lys Val Glu Asp Ser Thr Met Pro Ile
 26 31 36 41
 cgt cga act gtg aat tct acc cgg gaa act cct ccc aaa agc aag ctt 376
 Arg Arg Thr Val Asn Ser Thr Arg Glu Thr Pro Pro Lys Ser Lys Leu
 42 47 52 57
 gct gaa ggg gag gaa gaa aag cca gaa cca gac ata agt tca gag gaa 424
 Ala Glu Gly Glu Glu Glu Lys Pro Glu Pro Asp Ile Ser Ser Glu Glu
 58 63 68 73
 tct gtc tcc act gta gaa gaa caa gag aat gaa act cca cct gct act 472
 Ser Val Ser Thr Val Glu Glu Gln Glu Asn Glu Thr Pro Pro Ala Thr
 74 79 84 89
 tcg agt gag gca gag cag cca aag ggg gaa cct gag aat gaa gag aag 520
 Ser Ser Glu Ala Glu Gln Pro Lys Gly Glu Pro Glu Asn Glu Glu Lys
 90 95 100 105
 gaa gaa aat aag tct tct gag gaa acc aaa aag gat gag aaa gat cag 568
 Glu Glu Asn Lys Ser Ser Glu Glu Thr Lys Lys Asp Glu Lys Asp Gln
 106 111 116 121
 tct aaa gaa aag gag aag aaa gtg aaa aaa aca att cct tcc tgg gct 616
 Ser Lys Glu Lys Glu Lys Lys Val Lys Lys Thr Ile Pro Ser Trp Ala
 122 127 132 137
 acc ctt tct gcc agc cag cta gcc agg gcc cag aaa caa aca ccg atg 664
 Thr Leu Ser Ala Ser Gln Leu Ala Arg Ala Gln Lys Gln Thr Pro Met
 138 143 148 153
 gct tct tcc cca cgt ccc aag atg gat gca atc tta act gag gcc att 712
 Ala Ser Ser Pro Arg Pro Lys Met Asp Ala Ile Leu Thr Glu Ala Ile
 154 159 164 169
 aag gca tgc ttc cag aag agt ggt gca tca gtg gtt gct att cga aaa 760
 Lys Ala Cys Phe Gln Lys Ser Gly Ala Ser Val Val Ala Ile Arg Lys
 170 175 180 185
 tac atc atc cat aag tat cct tct ctg gag ctg gag aga agg ggt tat 808
 Tyr Ile Ile His Lys Tyr Pro Ser Leu Glu Leu Glu Arg Arg Gly Tyr
 186 191 196 201
 ctc ctt aaa caa gca ctg aaa aga gaa tta aat aga gga gtc atc aaa 856
 Leu Leu Lys Gln Ala Leu Lys Arg Glu Leu Asn Arg Gly Val Ile Lys

202	207	212	217	
cag gtt aaa gga aaa ggt gct tct gga agt ttt gtt gtg gtt cag aaa	Gln Val Lys Gly Lys Gly Ala Ser Gly Ser Phe Val Val Val Gln Lys			904
218	223	228	233	
tca aga aaa aca cct cag aaa tcc aga aac aga aag aat agg agc tct	Ser Arg Lys Thr Pro Gln Lys Ser Arg Asn Arg Lys Asn Arg Ser Ser			952
234	239	244	249	
gca gtg gat cca gaa cca caa gta aaa ttg gag gat gtc ctc cca ctg	Ala Val Asp Pro Glu Pro Gln Val Lys Leu Glu Asp Val Leu Pro Leu			1000
250	255	260	265	
gcc ttt act cgc ctt tgt gaa cct aaa gaa gct tcc tac agt ctc atc	Ala Phe Thr Arg Leu Cys Glu Pro Lys Glu Ala Ser Tyr Ser Leu Ile			1048
266	271	276	281	
agg aaa tat gtg tct cag tat tat cct aag ctt aga gtg gac atc agg	Arg Lys Tyr Val Ser Gln Tyr Tyr Pro Lys Leu Arg Val Asp Ile Arg			1096
282	287	292	297	
cct cag ctg ttg aag aac gct ctg cag aga gca gta gag agg ggc cag	Pro Gln Leu Leu Lys Asn Ala Leu Gln Arg Ala Val Glu Arg Gly Gln			1144
298	303	308	313	
tta gaa cag ata act ggc aaa ggt gct tcg ggg aca ttc cag ctg aag	Leu Glu Gln Ile Thr Gly Lys Gly Ala Ser Gly Thr Phe Gln Leu Lys			1192
314	319	324	329	
aaa tca ggg gag aaa ccc ctg ctt ggt gga agc ctg atg gaa tat gca	Lys Ser Gly Glu Lys Pro Leu Leu Gly Gly Ser Leu Met Glu Tyr Ala			1240
330	335	340	345	
atc ttg tct gcc att gct gcc atg aat gag ccg aag acc tgc tct acc	Ile Leu Ser Ala Ile Ala Ala Met Asn Glu Pro Lys Thr Cys Ser Thr			1288
346	351	356	361	
act gct ctg aag aag tat gtc cta gag aat cac cca gga acc aat tct	Thr Ala Leu Lys Lys Tyr Val Leu Glu Asn His Pro Gly Thr Asn Ser			1336
362	367	372	377	
aac tat caa atg cat ttg ctg aaa aaa acc ctg cag aaa tgc gaa aag	Asn Tyr Gln Met His Leu Leu Lys Lys Thr Leu Gln Lys Cys Glu Lys			1384
378	383	388	393	
aat ggg tgg atg gaa cag atc tct ggg aaa ggg ttc agt ggc acc ttc	Asn Gly Trp Met Glu Gln Ile Ser Gly Lys Gly Phe Ser Gly Thr Phe			1432
394	399	404	409	
cag ctc tgt ttt ccc tat tat ccc agc cca gga gtt ctg ttt ccg aag	Gln Leu Cys Phe Pro Tyr Tyr Pro Ser Pro Gly Val Leu Phe Pro Lys			1480
410	415	420	425	
aaa gag cca gat gat tct aga gat gag gat gaa gat gaa gat gag tca	Lys Glu Pro Asp Asp Ser Arg Asp Glu Asp Glu Asp Glu Asp Glu Ser			1528
426	431	436	441	

tca gaa gaa gac tct gag gat gaa gag ccg cca cct aag aga agg ttg	1576
Ser Glu Glu Asp Ser Glu Asp Glu Glu Pro Pro Pro Lys Arg Arg Leu	457
442 447 452	
cag aag aaa acc cca gcc aag tcc cca ggg aag gcc gca tct gtg aag	1624
Gln Lys Lys Thr Pro Ala Lys Ser Pro Gly Lys Ala Ala Ser Val Lys	473
458 463 468	
cag aga ggg tcc aaa cct gca cct aaa gtc tca gct gcc cag cgg ggg	1672
Gln Arg Gly Ser Lys Pro Ala Pro Lys Val Ser Ala Ala Gln Arg Gly	489
474 479 484	
aaa gct agg ccc ttg cct aag aaa gca cct cct aag gcc aaa acg cct	1720
Lys Ala Arg Pro Leu Pro Lys Lys Ala Pro Pro Lys Ala Lys Thr Pro	505
490 495 500	
gcc aag aag acc aga ccc tca tcc aca gtc atc aag aaa cct agt ggt	1768
Ala Lys Lys Thr Arg Pro Ser Ser Thr Val Ile Lys Lys Pro Ser Gly	521
506 511 516	
ggc tcc tca aag aag cct gca acc agt gca aga aag gaa gta aaa ttg	1816
Gly Ser Ser Lys Lys Pro Ala Thr Ser Ala Arg Lys Glu Val Lys Leu	537
522 527 532	
ccg ggc aag ggc aaa tcc acc atg aag aag tct ttc aga gtg aaa aag	1864
Pro Gly Lys Gly Lys Ser Thr Met Lys Lys Ser Phe Arg Val Lys Lys	553
538 543 548	
taa attt tataggaaaa aagggtatca tgatgaaatt caaaatctta ttttctaagg	1921
*	
554	
tcagtgtgca tttgtttagt tttgatgctt ttcaaattac attattttcc tcccctatga	1981
acattgtggg gagggactct aaataaacca gtttaggcatt ttgctagctt taggtgcttt	2041
tattggtgcc tgcccttttc cttgttcatt ttaattttctg caataatcct ggactttcct	2101
aaactatgta atgtatacaa gtcccttttc tctgcctcac cctgtattg cggccgctct	2161
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ccgaacaagt ggctgcgggc gtcgcccagg agtcacgga cgccagaatc tggccgggtt	120
ctgagcttgt tccgectccc tccccggga	171
atg gcg cta tcc ggg tcg acc Met Ala Leu Ser Gly Ser Thr	
1 5	
ccg gcc ccg tgc tgg gag gag gat gag tgc ctg gac tac tac ggg atg Pro Ala Pro Cys Trp Glu Glu Asp Glu Cys Leu Asp Tyr Tyr Gly Met	219
8 13 18 23	
ctg tgc ctt cac cgt atg ttc gag gtg gtg ggc ggg caa ctg acc gag Leu Ser Leu His Arg Met Phe Glu Val Val Gly Gly Gln Leu Thr Glu	267
24 29 34 39	
tgc gag ctg gag ctc ctg gcc ttt ctg ctg gat gag gct cct ggc gcc Cys Glu Leu Glu Leu Leu Ala Phe Leu Leu Asp Glu Ala Pro Gly Ala	315
40 45 50 55	
gcc gga ggc tta tcc cgg gcc cgc agc ggc cta aag ctc ctg ctg gag Ala Gly Gly Leu Ser Arg Ala Arg Ser Gly Leu Lys Leu Leu Leu Glu	363
56 61 66 71	
ctg gag cgc cgc ggg cag tgc gac gag agc aac ctg cgg ctg ctg ggg Leu Glu Arg Arg Gly Gln Cys Asp Glu Ser Asn Leu Arg Leu Leu Gly	411
72 77 82 87	
caa ctc ctg cgc gtg ctg gcc cgc cac gac ctg ctg ccg cac ctg gcg Gln Leu Leu Arg Val Leu Ala Arg His Asp Leu Leu Pro His Leu Ala	459
88 93 98 103	
cgc aag cgg cgc cgg cca gtg tct cca gaa cgc tat agc tat ggc acc Arg Lys Arg Arg Arg Pro Val Ser Pro Glu Arg Tyr Ser Tyr Gly Thr	507
104 109 114 119	
tcc agc tct tca aag agg aca gag ggt agc tgc cgt cgc cgt cgg cag Ser Ser Ser Ser Lys Arg Thr Glu Gly Ser Cys Arg Arg Arg Arg Gln	555
120 125 130 135	
tca agc agt tct gca aat tct cag cag ggc tcc ccc cca acc aag cgg Ser Ser Ser Ser Ala Asn Ser Gln Gln Gly Ser Pro Pro Thr Lys Arg	603
136 141 146 151	
cag cgg cgg agt cgg ggc cgg ccc agt ggt ggt gcc aga cgg cgg cgg Gln Arg Arg Ser Arg Gly Arg Pro Ser Gly Gly Ala Arg Arg Arg Arg	651
152 157 162 167	
aga ggg gcc cca gcc gca ccc cag cag cag tca gag ccc gcc aga cct Arg Gly Ala Pro Ala Ala Pro Gln Gln Gln Ser Glu Pro Ala Arg Pro	699
168 173 178 183	
tcc tct gaa ggc aaa gtg acc aca acc aac ctg ggc ttc agc cac atc Ser Ser Glu Gly Lys Val Thr Thr Thr Asn Leu Gly Phe Ser His Ile	747
184 189 194 199	
agt ggg cac tgg agc tgg ggt gca cat ggg gcc tgc tca cct tgc cca Ser Gly His Trp Ser Trp Gly Ala His Gly Ala Cys Ser Pro Cys Pro	795

200	205	210	215	
cac atc tcc agc cag cca ggg ccc tgc cca gct tca att tac aga cct				843
His Ile Ser Ser Gln Pro Gly Pro Cys Pro Ala Ser Ile Tyr Arg Pro				
216	221	226	231	
gac tct cct cac ctt ccc ccc tgc tgt cca gag ctg aac ata gac ttg				891
Asp Ser Pro His Leu Pro Pro Cys Cys Pro Glu Leu Asn Ile Asp Leu				
232	237	242	247	
cac ttg gat gtc acc tgg agt gtc aca tgg gag tgt tat ggc agc atc				939
His Leu Asp Val Thr Trp Ser Val Thr Trp Glu Cys Tyr Gly Ser Ile				
248	253	258	263	
ata cca aga agg tgg ctg ttt act ggt ttt ggc ccc atg ttc tag atc				987
Ile Pro Arg Arg Trp Leu Phe Thr Gly Phe Gly Pro Met Phe *				
264	269	274		
gcgagcggcc gctctagagg atccaagctt acgtacgcgt gcatgcgacg tcatagctct				1047
tctatagtgt cacctaaatt				1067
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gactccggag agcggatcgc ggggcgcagg agcccgatcg cgctggcc atg gcc tcc				117
Met Ala Ser				
1				
aac ttt aac gac ata gtc aag cag ggc tac gtg aaa atc cgc agc agg				165
Asn Phe Asn Asp Ile Val Lys Gln Gly Tyr Val Lys Ile Arg Ser Arg				
4	9	14	19	
aag ctt ggg att ttc aga cga tgc tgg ttg gtt ttc aag aag gct tct				213
Lys Leu Gly Ile Phe Arg Arg Cys Trp Leu Val Phe Lys Lys Ala Ser				
20	25	30	35	
agc aaa gga ccc aga agg tta gaa aaa ttt cca gat gaa aag gca gct				261
Ser Lys Gly Pro Arg Arg Leu Glu Lys Phe Pro Asp Glu Lys Ala Ala				
36	41	46	51	
tat ttc aga aac ttt cat aag gta act gaa ctg cac aat atc aaa aat				309
Tyr Phe Arg Asn Phe His Lys Val Thr Glu Leu His Asn Ile Lys Asn				
52	57	62	67	

ata acc aga ctg ccc cga gag aca aag aag cat gcg gtg gca atc atc	357
Ile Thr Arg Leu Pro Arg Glu Thr Lys Lys His Ala Val Ala Ile Ile	
68 73 78 83	
ttt cac gat gaa aca tcg aag aca ttt gcc tgt gag tca gag ctg gag	405
Phe His Asp Glu Thr Ser Lys Thr Phe Ala Cys Glu Ser Glu Leu Glu	
84 89 94 99	
gcc gag gag tgg tgc aag cac ctc tgc atg gag tgt ctg ggg acc agg	453
Ala Glu Glu Trp Cys Lys His Leu Cys Met Glu Cys Leu Gly Thr Arg	
100 105 110 115	
ctc aat gac atc agc ctt ggg gag ccc gac ctt ctg gcc gca gga gtg	501
Leu Asn Asp Ile Ser Leu Gly Glu Pro Asp Leu Leu Ala Ala Gly Val	
116 121 126 131	
cag cgg gaa cag aat gag aga ttc aac gtg tat ctt atg cct aca cca	549
Gln Arg Glu Gln Asn Glu Arg Phe Asn Val Tyr Leu Met Pro Thr Pro	
132 137 142 147	
aac ctg gat att tat ggt gaa tgc aca atg cag atc act cat gaa aat	597
Asn Leu Asp Ile Tyr Gly Glu Cys Thr Met Gln Ile Thr His Glu Asn	
148 153 158 163	
atc tat ctc tgg gat atc cac aat gcc aag gtc aaa ctg gtg atg tgg	645
Ile Tyr Leu Trp Asp Ile His Asn Ala Lys Val Lys Leu Val Met Trp	
164 169 174 179	
cct ctc agc tca ctg agg aga tac ggt cgg gac tca acg tgg ttc acg	693
Pro Leu Ser Ser Leu Arg Arg Tyr Gly Arg Asp Ser Thr Trp Phe Thr	
180 185 190 195	
ttt gag tca gga aga atg tgt gac aca gga gaa gga cta ttc act ttt	741
Phe Glu Ser Gly Arg Met Cys Asp Thr Gly Glu Gly Leu Phe Thr Phe	
196 201 206 211	
caa aca agg gaa gga gaa atg atc tat cag aag gtt cat tct gcg aca	789
Gln Thr Arg Glu Gly Glu Met Ile Tyr Gln Lys Val His Ser Ala Thr	
212 217 222 227	
ctg gcc ata gct gag caa cat gaa aga tta atg cta gaa atg gaa cag	837
Leu Ala Ile Ala Glu Gln His Glu Arg Leu Met Leu Glu Met Glu Gln	
228 233 238 243	
aag gcc cgg ctt cag aca agc ttg act gaa cca atg aca tta tcc aaa	885
Lys Ala Arg Leu Gln Thr Ser Leu Thr Glu Pro Met Thr Leu Ser Lys	
244 249 254 259	
tca ata tct ctt cct cgc agc gcg tac tgg cat cac atc act cgt cag	933
Ser Ile Ser Leu Pro Arg Ser Ala Tyr Trp His His Ile Thr Arg Gln	
260 265 270 275	
aac agc gtt ggt gaa atc tac agt ttg caa gga aat cat gaa aat cgg	981
Asn Ser Val Gly Glu Ile Tyr Ser Leu Gln Gly Asn His Glu Asn Arg	
276 281 286 291	
cac tcc gat tta aca gga aag agt tgc aag aca tcc gag aac aga ttt	1029

Ala Glu Glu Trp Cys Lys His Leu Cys Met Glu Cys Leu Gly Thr Arg	
100	105 110 115
ctc aat gac atc agc ctt ggg gag ccc gac ctt ctg gcc gca gga gtg	501
Leu Asn Asp Ile Ser Leu Gly Glu Pro Asp Leu Leu Ala Ala Gly Val	
116	121 126 131
cag cgg gaa cag aat gag aga ttc aac gtg tat ctt atg cct aca cca	549
Gln Arg Glu Gln Asn Glu Arg Phe Asn Val Tyr Leu Met Pro Thr Pro	
132	137 142 147
aac ctg gat att tat ggt gaa tgc aca atg cag atc act cat gaa aat	597
Asn Leu Asp Ile Tyr Gly Glu Cys Thr Met Gln Ile Thr His Glu Asn	
148	153 158 163
atc tat ctc tgg gat atc cac aat gcc aag gtc aaa ctg gtg atg tgg	645
Ile Tyr Leu Trp Asp Ile His Asn Ala Lys Val Lys Leu Val Met Trp	
164	169 174 179
cct ctc agc tca ctg agg aga tac ggt cgg gac tca acg tgg ttc acg	693
Pro Leu Ser Ser Leu Arg Arg Tyr Gly Arg Asp Ser Thr Trp Phe Thr	
180	185 190 195
ttt gag tca gga aga atg tgt gac aca gga gaa gga cta ttc act ttt	741
Phe Glu Ser Gly Arg Met Cys Asp Thr Gly Glu Gly Leu Phe Thr Phe	
196	201 206 211
caa aca agg gaa gga gaa atg atc tat cag aag gtt cat tct gcg aca	789
Gln Thr Arg Glu Gly Glu Met Ile Tyr Gln Lys Val His Ser Ala Thr	
212	217 222 227
ctg gcc ata gct gag caa cat gaa aga tta atg cta gaa atg gaa cag	837
Leu Ala Ile Ala Glu Gln His Glu Arg Leu Met Leu Glu Met Glu Gln	
228	233 238 243
aag gcc cgg gta agg ccc ctt cct tgg taa c ctatcagctt ggaaatgaat	888
Lys Ala Arg Val Arg Pro Leu Pro Trp *	
244	249
gtcactggga tctgaaaaaa aaaaaa	914

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ctg tcc atg ctg tgc agg aat cag ctg agc cct gtc aat atc cat ccc	913
Leu Ser Met Leu Cys Arg Asn Gln Leu Ser Pro Val Asn Ile His Pro	
205 210 215 220	
agt tat gca cct tct tcc cca agc agt agc aac tca ggc tcc tac aaa	961
Ser Tyr Ala Pro Ser Ser Pro Ser Ser Ser Asn Ser Gly Ser Tyr Lys	
221 226 231 236	
gga agc gac tgt agc ccc atc atg agg cgt tct gga agg tac atg tct	1009
Gly Ser Asp Cys Ser Pro Ile Met Arg Arg Ser Gly Arg Tyr Met Ser	
237 242 247 252	
tgc ggt gaa aat cat ggt gtc aga ccc cca aac cca gag cag tat ttg	1057
Cys Gly Glu Asn His Gly Val Arg Pro Pro Asn Pro Glu Gln Tyr Leu	
253 258 263 268	
act cca ctg cag cag aaa gag gtg aca gtg aga cac ctc aaa acc aag	1105
Thr Pro Leu Gln Gln Lys Glu Val Thr Val Arg His Leu Lys Thr Lys	
269 274 279 284	
ctg aag gaa tct gag cgc cga ctc cat gaa agg gaa agt gaa atc gtg	1153
Leu Lys Glu Ser Glu Arg Arg Leu His Glu Arg Glu Ser Glu Ile Val	
285 290 295 300	
gag ctt aag tcc cag ctg gcc cgc atg cga gag gac tgg att gag gag	1201
Glu Leu Lys Ser Gln Leu Ala Arg Met Arg Glu Asp Trp Ile Glu Glu	
301 306 311 316	
gag tgt cac cgg gta gag gcc cag ttg gca ctc aaa gaa gcc agg aaa	1249
Glu Cys His Arg Val Glu Ala Gln Leu Ala Leu Lys Glu Ala Arg Lys	
317 322 327 332	
gag att aaa cag ctc aaa cag gtc atc gaa acc atg cgg agc agc ttg	1297
Glu Ile Lys Gln Leu Lys Gln Val Ile Glu Thr Met Arg Ser Ser Leu	
333 338 343 348	
gct gat aaa gat aaa ggc att cag aaa tat ttt gtg gac ata aac atc	1345
Ala Asp Lys Asp Lys Gly Ile Gln Lys Tyr Phe Val Asp Ile Asn Ile	
349 354 359 364	
caa aac aag aag ctg gag tct ctc ctt cag agc atg gag atg gca cac	1393
Gln Asn Lys Lys Leu Glu Ser Leu Leu Gln Ser Met Glu Met Ala His	
365 370 375 380	
agt ggc tct ctg agg gac gaa ctg tgc cta gac ttt cca tgt gat tcc	1441
Ser Gly Ser Leu Arg Asp Glu Leu Cys Leu Asp Phe Pro Cys Asp Ser	
381 386 391 396	
cca gag aag agc tta acc ctc aac ccc cct ctt gac aca atg gca gat	1489
Pro Glu Lys Ser Leu Thr Leu Asn Pro Pro Leu Asp Thr Met Ala Asp	
397 402 407 412	
ggg tta tct ctg gaa gag cag gtc acg ggg gaa ggg gct gac agg gag	1537
Gly Leu Ser Leu Glu Glu Gln Val Thr Gly Glu Gly Ala Asp Arg Glu	
413 418 423 428	
cta ctg gta gga gat agc ata gcc aac agc aca gat ttg ttc gat gag	1585

Leu 429	Leu 429	Val 429	Gly 429	Asp 429	Ser 434	Ile 434	Ala 434	Asn 434	Ser 439	Thr 439	Asp 439	Leu 439	Phe 439	Asp 444	Glu 444	
ata 445	gtg 445	aca 445	gcc 445	acc 445	acc 450	aca 450	gaa 450	tct 450	ggg 450	gac 455	ctg 455	gag 455	ctt 455	gtg 460	cat 460	1633
tcc 461	acc 461	cct 461	ggg 461	gct 461	aac 466	gtc 466	ctg 466	gag 466	ctg 466	ctg 471	ccc 471	ata 471	gtc 471	atg 476	ggg 476	1681
cag 477	gag 477	gag 477	ggc 477	agt 477	gtg 482	gtg 482	gtg 482	gag 482	cga 482	gcc 487	gtt 487	cag 487	acc 487	gac 487	gtg 492	1729
gtg 493	ccc 493	tac 493	agc 493	cca 493	gcc 498	atc 498	tca 498	gag 498	ctc 498	att 503	cag 503	agt 503	gtg 503	ctg 503	cag 508	1777
aag 509	ctc 509	cag 509	gac 509	ccc 509	tgt 514	ccc 514	tcg 514	agc 514	ttg 514	gcg 519	tcc 519	cct 519	gat 519	gag 519	tct 524	1825
gaa 525	cca 525	gac 525	tcg 525	atg 525	gag 530	agc 530	ttc 530	cca 530	gag 530	tcc 535	ctc 535	tct 535	gcc 535	tta 535	gtg 540	1873
gtt 541	gat 541	tta 541	act 541	cca 541	aga 546	aat 546	cca 546	aac 546	tca 546	gcc 551	atc 551	ctt 551	ttg 551	tct 551	ccc 556	1921
gtg 557	gag 557	acc 557	ccc 557	tac 557	gcc 562	aat 562	gtg 562	gat 562	gca 562	gaa 567	gtt 567	cat 567	gca 567	aac 567	cgc 572	1969
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acg 621	gtt 621	ctg 621	tgg 621	gca 621	ttc 626	agt 626	act 626	cag 626	aga 626	ggg 631	gga 631	acg 631	gat 631	cct 631	gtg 636	2161
tat 637	aac 637	atc 637	ggg 637	gcc 637	ttg 642	ctc 642	agg 642	ggc 642	tgt 642	tgc 647	gtg 647	gtt 647	gcc 647	ctg 647	cat 652	2209
tcg 653	ctc 653	cgc 653	cgc 653	acc 653	gcc 653	ttc 653	cgt 653	atc 653	aaa 653	acc 653	taa 653	atag 653	aagttgttgt 653			2259

653	658	663	
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gtatttgtgt aattgggttg aagaagtctt gaatagctct ttactgtctt acttgggggtt			2739
gataagattt gagtgtttgc aattttttac taaatgtagc tccaaagtct taaatggctt			2799
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aataaagatt agtgtttcca tttaaataaa tgttttatcc tccataaaa taataattat			2979
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caataggggg tctgtaaaaa ttgaattaaa ttaggaagag ggaaaaagag ttagttatta			3099
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tgtttacttt taaaaaaaaa aa			3181

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aaaaggttgt aatgggagag ttgttccctac tgatgggggc agatatgatg ttcatttggg	180
ggagagg atg cgg tat gct gta tac tgg gat gaa ctg gca tcg gaa gtg	229
Met Arg Tyr Ala Val Tyr Trp Asp Glu Leu Ala Ser Glu Val	
1 5 10	

aga cga tgt acg tgg ttt tac aag ggg gac aaa gac aat aag tat gtt	277
Arg Arg Cys Thr Trp Phe Tyr Lys Gly Asp Lys Asp Asn Lys Tyr Val	
15 20 25 30	
ccc tac tcg gag agc ttc agc caa gtt tta gag gaa act tac atg ctt	325
Pro Tyr Ser Glu Ser Phe Ser Gln Val Leu Glu Glu Thr Tyr Met Leu	
31 36 41 46	
gct gta act ttg gat gaa tgg aaa aag aaa ctg gaa tct ccc aac aga	373
Ala Val Thr Leu Asp Glu Trp Lys Lys Lys Leu Glu Ser Pro Asn Arg	
47 52 57 62	
gaa att att att tta cac aat cca aag ctt atg gtg cat tac cag cca	421
Glu Ile Ile Ile Leu His Asn Pro Lys Leu Met Val His Tyr Gln Pro	
63 68 73 78	
gtt gca ggg tct gat gat tgg ggt tca aca ccc atg gag cag ggt cga	469
Val Ala Gly Ser Asp Asp Trp Gly Ser Thr Pro Met Glu Gln Gly Arg	
79 84 89 94	
cca aga act gtg aag aga gga gtt gag aac atc tct gtt gac att cat	517
Pro Arg Thr Val Lys Arg Gly Val Glu Asn Ile Ser Val Asp Ile His	
95 100 105 110	
tgt gga gaa cct tta caa ata gat cac ttg gtt ttt gta gtc cat ggg	565
Cys Gly Glu Pro Leu Gln Ile Asp His Leu Val Phe Val Val His Gly	
111 116 121 126	
att gga cca gct tgt gat ctc cgc ttt cga agc att gta cag tgt gtt	613
Ile Gly Pro Ala Cys Asp Leu Arg Phe Arg Ser Ile Val Gln Cys Val	
127 132 137 142	
aat gat ttt cgc agt gtt tcc ttg aac ttg cta cag aca cat ttt aag	661
Asn Asp Phe Arg Ser Val Ser Leu Asn Leu Leu Gln Thr His Phe Lys	
143 148 153 158	
aaa gcc caa gaa aat cag cag att ggg agg gta gaa ttt ctt cca gtc	709
Lys Ala Gln Glu Asn Gln Gln Ile Gly Arg Val Glu Phe Leu Pro Val	
159 164 169 174	
aac tgg cac agt cct ttg cat tct act ggt gtg gat gta gat ctg cag	757
Asn Trp His Ser Pro Leu His Ser Thr Gly Val Asp Val Asp Leu Gln	
175 180 185 190	
cga ata acc ctg ccc agc att aac cgc ctc agg cac ttc acc aat gac	805
Arg Ile Thr Leu Pro Ser Ile Asn Arg Leu Arg His Phe Thr Asn Asp	
191 196 201 206	
aca att ctg gat gtc ttc ttc tac aat agt ccc acc tac tgt cag act	853
Thr Ile Leu Asp Val Phe Phe Tyr Asn Ser Pro Thr Tyr Cys Gln Thr	
207 212 217 222	
att gtg gac aca gtt gct tct gaa atg aac cga ata tac aca ctt ttt	901
Ile Val Asp Thr Val Ala Ser Glu Met Asn Arg Ile Tyr Thr Leu Phe	
223 228 233 238	
cta cag agg aac cct gat ttc aaa ggg ggt gta tcc att gct ggt cat	949

Leu Gln Arg Asn Pro Asp Phe Lys Gly Gly Val Ser Ile Ala Gly His	
239 244 249 254	
agt tta ggt tgc ctt ata ttg ttt gat atc cta aca aat cag aaa gat	997
Ser Leu Gly Ser Leu Ile Leu Phe Asp Ile Leu Thr Asn Gln Lys Asp	
255 260 265 270	
tct ttg ggg gat att gac agt gaa aag ggt tgc cta aat att gta atg	1045
Ser Leu Gly Asp Ile Asp Ser Glu Lys Gly Ser Leu Asn Ile Val Met	
271 276 281 286	
gat caa gga gat aca cct aca cta gag gaa gat ttg aag aaa ctt cag	1093
Asp Gln Gly Asp Thr Pro Thr Leu Glu Glu Asp Leu Lys Lys Leu Gln	
287 292 297 302	
ctc tct gaa ttc ttt gat atc ttt gag aag gag aaa gta gat aag gaa	1141
Leu Ser Glu Phe Phe Asp Ile Phe Glu Lys Glu Lys Val Asp Lys Glu	
303 308 313 318	
gct ctg gct tta tgt aca gac cga gat ctt cag gaa ata gga att cct	1189
Ala Leu Ala Leu Cys Thr Asp Arg Asp Leu Gln Glu Ile Gly Ile Pro	
319 324 329 334	
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Leu Gly Pro Arg Lys Lys Ile Leu Asn Tyr Phe Ser Thr Arg Lys Asn	
335 340 345 350	
tca atg ggt att aag aga cca gcc ccg cag cct gct tca ggg gca aac	1285
Ser Met Gly Ile Lys Arg Pro Ala Pro Gln Pro Ala Ser Gly Ala Asn	
351 356 361 366	
atc ccc aaa gaa tct gag ttc tgc agt agc agt aat act aga aat ggt	1333
Ile Pro Lys Glu Ser Glu Phe Cys Ser Ser Ser Asn Thr Arg Asn Gly	
367 372 377 382	
gac tat ctg gat gtt ggc att ggg cag gtg tct gtg aaa tac ccc cgg	1381
Asp Tyr Leu Asp Val Gly Ile Gly Gln Val Ser Val Lys Tyr Pro Arg	
383 388 393 398	
ctc atc tat aaa cca gag ata ttc ttt gcc ttt gga tct ccc att gga	1429
Leu Ile Tyr Lys Pro Glu Ile Phe Phe Ala Phe Gly Ser Pro Ile Gly	
399 404 409 414	
atg ttc ctt act gtc cga gga cta aaa aga att gat ccc aac tac aga	1477
Met Phe Leu Thr Val Arg Gly Leu Lys Arg Ile Asp Pro Asn Tyr Arg	
415 420 425 430	
ttt cca acg tgc aaa ggt ttc ttc aat att tat cac cct ttt gat cct	1525
Phe Pro Thr Cys Lys Gly Phe Phe Asn Ile Tyr His Pro Phe Asp Pro	
431 436 441 446	
gtg gcc tat agg att gaa cca atg gtg gtc cca gga gtg gaa ttt gag	1573
Val Ala Tyr Arg Ile Glu Pro Met Val Val Pro Gly Val Glu Phe Glu	
447 452 457 462	
cca atg ctg atc cca cat cat aaa ggc agg aag cgg atg cac tta gaa	1621
Pro Met Leu Ile Pro His His Lys Gly Arg Lys Arg Met His Leu Glu	

463	468	473	478			
ctg aga gag ggc ttg	acc agg atg agt atg	gac ctt aag aac aac ttg		1669		
Leu Arg Glu Gly Leu	Thr Arg Met Ser Met	Asp Leu Lys Asn Asn Leu				
479	484	489	494			
cta ggt tgc ctg cgg	atg gcc tgg aag tct	ttt acc aga gct cca tac		1717		
Leu Gly Ser Leu Arg	Met Ala Trp Lys Ser	Phe Thr Arg Ala Pro Tyr				
495	500	505	510			
cct gcc tta caa gct	tca gaa aca cca gaa	gaa act gaa gca gaa cct		1765		
Pro Ala Leu Gln Ala	Ser Glu Thr Pro Glu	Glu Thr Glu Ala Glu Pro				
511	516	521	526			
gaa tca act tca gag	aag cct agt gat gtt	aac aca gaa gag acc tct		1813		
Glu Ser Thr Ser Glu	Lys Pro Ser Asp Val	Asn Thr Glu Glu Thr Ser				
527	532	537	542			
gtg gca gtt aaa gaa	gaa gtc ctg cct atc	aat gtg ggg atg ctg aat		1861		
Val Ala Val Lys Glu	Glu Val Leu Pro Ile	Asn Val Gly Met Leu Asn				
543	548	553	558			
gga ggc caa cgc att	gac tat gtg cta cag	gag aag cct att gaa agt		1909		
Gly Gly Gln Arg Ile	Asp Tyr Val Leu Gln	Glu Lys Pro Ile Glu Ser				
559	564	569	574			
ttt aat gag tat tta	ttt gct tta caa agc	cat cta tgc tac tgg gag		1957		
Phe Asn Glu Tyr Leu	Phe Ala Leu Gln Ser	His Leu Cys Tyr Trp Glu				
575	580	585	590			
tct gaa gat aca gta	ttg ctc gtc ctc aaa	gag atc tac caa acc cag		2005		
Ser Glu Asp Thr Val	Leu Leu Val Leu Lys	Glu Ile Tyr Gln Thr Gln				
591	596	601	606			
ggt atc ttc ctt gat	cag cct tta cag taa	a aatgacccat ctatggctgc		2056		
Gly Ile Phe Leu Asp	Gln Pro Leu Gln *					
607	612					
ttaatacggg	cattgagggg	tccttcccca	gaaaatccac	ctgtttgttg	ctgcaatttt	2116
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taaaatg	4223

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 tttatatatt tatatttaga gattctaaaa attgcatgat gtttgatatt attactactt 180
 tatattgcag aatgtgccca tttacttttg gctcacaatg ctccagtcaa ggtgaaaaat 240
 gctcagggat ggagccctct ggcggaagcc atcagctatg gagataggca g atg att 297
 Met Ile
 1
 aca gct ctt ttg agg aag ctt aag cag caa tcc agg gaa agt gtt gaa 345
 Thr Ala Leu Leu Arg Lys Leu Lys Gln Gln Ser Arg Glu Ser Val Glu
 3 8 13 18
 gaa aaa cga cct cga tta tta aaa gcc ctg aaa gag cta ggt gac ttt 393
 Glu Lys Arg Pro Arg Leu Leu Lys Ala Leu Lys Glu Leu Gly Asp Phe
 19 24 29 34
 tat cta gaa ctt cac tgg gat ttt caa agc tgg gtg cct tta ctt tcc 441
 Tyr Leu Glu Leu His Trp Asp Phe Gln Ser Trp Val Pro Leu Leu Ser
 35 40 45 50
 cga att ctg cct tcc gat gca tgt aaa ata tac aaa caa ggt atc aat 489
 Arg Ile Leu Pro Ser Asp Ala Cys Lys Ile Tyr Lys Gln Gly Ile Asn
 51 56 61 66
 atc agg ctt gac aca act ctc ata gac ttt act gac atg aag tgc caa 537
 Ile Arg Leu Asp Thr Thr Leu Ile Asp Phe Thr Asp Met Lys Cys Gln
 67 72 77 82
 cga ggg gat cta agc ttc att ttc aat ggg gat gcg gcg ccc tct gaa 585
 Arg Gly Asp Leu Ser Phe Ile Phe Asn Gly Asp Ala Ala Pro Ser Glu
 83 88 93 98
 tct ttt gta gta tta gac aat gaa caa aaa gtt tat cag cga ata cat 633
 Ser Phe Val Val Leu Asp Asn Glu Gln Lys Val Tyr Gln Arg Ile His
 99 104 109 114
 cat gag gaa tca gag atg gaa aca gaa gaa gag gtg gat att tta atg 681
 His Glu Glu Ser Glu Met Glu Thr Glu Glu Glu Val Asp Ile Leu Met
 115 120 125 130
 agc agt gat att tac tct gca act tta tca aca aaa tca att tct ttc 729
 Ser Ser Asp Ile Tyr Ser Ala Thr Leu Ser Thr Lys Ser Ile Ser Phe

131	136	141	146	
acg cgt gcc cag aca gga tgg ctt ttt cgg gaa gat aaa aca gaa aga				777
Thr Arg Ala Gln Thr Gly Trp Leu Phe Arg Glu Asp Lys Thr Glu Arg				
147	152	157	162	
gta gga aac ttt ttg gca gac ttt tac ctg gtg aat gga ctt gtt tta				825
Val Gly Asn Phe Leu Ala Asp Phe Tyr Leu Val Asn Gly Leu Val Leu				
163	168	173	178	
gaa tca agg aaa aga aga gaa cat ctc agt gaa gag gat att ctt cga				873
Glu Ser Arg Lys Arg Arg Glu His Leu Ser Glu Glu Asp Ile Leu Arg				
179	184	189	194	
aat aag gcc atc atg gag agt ttg agt aaa ggt gga aac ata atg gaa				921
Asn Lys Ala Ile Met Glu Ser Leu Ser Lys Gly Gly Asn Ile Met Glu				
195	200	205	210	
cag aat ttt gag ccg att cga aga cag tct ctt aca cct cct cct cag				969
Gln Asn Phe Glu Pro Ile Arg Arg Gln Ser Leu Thr Pro Pro Pro Gln				
211	216	221	226	
aac act att aca tgg gaa gaa tat ata tct gct gaa aat gga aaa gct				1017
Asn Thr Ile Thr Trp Glu Glu Tyr Ile Ser Ala Glu Asn Gly Lys Ala				
227	232	237	242	
cct cat ctg ggt aga gaa ttg gtg tgc aaa gag agt aag aaa acg ttt				1065
Pro His Leu Gly Arg Glu Leu Val Cys Lys Glu Ser Lys Lys Thr Phe				
243	248	253	258	
aaa gct acg ata gcc atg agc cag gaa ttt ccc tta ggg ata gag tta				1113
Lys Ala Thr Ile Ala Met Ser Gln Glu Phe Pro Leu Gly Ile Glu Leu				
259	264	269	274	
tta ttg aat gtt tta gaa gta gta gct ccc ttc aag cac ttt aac aag				1161
Leu Leu Asn Val Leu Glu Val Val Ala Pro Phe Lys His Phe Asn Lys				
275	280	285	290	
ctt aga gaa ttt gtt cag atg aag ctt cct cca ggc ttt cct gta aaa				1209
Leu Arg Glu Phe Val Gln Met Lys Leu Pro Pro Gly Phe Pro Val Lys				
291	296	301	306	
tta gat ata cct gtg ttt ccc aca atc aca gcc act gtg act ttt cag				1257
Leu Asp Ile Pro Val Phe Pro Thr Ile Thr Ala Thr Val Thr Phe Gln				
307	312	317	322	
gag ttt cga tac gat gaa ttt gat ggc tcc atc ttt act ata cct gat				1305
Glu Phe Arg Tyr Asp Glu Phe Asp Gly Ser Ile Phe Thr Ile Pro Asp				
323	328	333	338	
gac tac aag gaa gac cca agc cgt ttt cct gat ctt taa ctgacgtgga				1354
Asp Tyr Lys Glu Asp Pro Ser Arg Phe Pro Asp Leu *				
339	344	349		
aaaggatgcc gtctaacc aa ggaagaaaa tacagagacc ctagaagtgg atccaaatag				1414
aagggacaaa tgctttcagt gaagaaaagg gaattacaca ttgaatcgac acatcagtaa				1474

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 tttgtctttt taaaaatata catattataa atgtaatagt ttgacacatt aatgacccta 1594
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 Ala Leu Gly Arg Arg Lys Gly Val Trp Leu Arg Leu Arg Lys Ile Leu
 4 9 14 19
 ttc tgt gtt ttg ggg ttg tac att gcc att cca ttt ctc atc aaa cta 153
 Phe Cys Val Leu Gly Leu Tyr Ile Ala Ile Pro Phe Leu Ile Lys Leu
 20 25 30 35
 tgt cct gga ata cag gcc aaa ctg att ttc ttg aat ttc gta aga gtt 201
 Cys Pro Gly Ile Gln Ala Lys Leu Ile Phe Leu Asn Phe Val Arg Val
 36 41 46 51
 ccc tat ttc att gat ttg aaa aaa cca cag gat caa ggt ttg aat cac 249
 Pro Tyr Phe Ile Asp Leu Lys Lys Pro Gln Asp Gln Gly Leu Asn His
 52 57 62 67
 acg tgt aac tac tac ctg cag cca gag gaa gac gtg acc att gga gtc 297
 Thr Cys Asn Tyr Tyr Leu Gln Pro Glu Glu Asp Val Thr Ile Gly Val
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 Trp His Thr Val Pro Ala Val Trp Trp Lys Asn Ala Gln Gly Lys Asp
 84 89 94 99
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 Gln Met Trp Tyr Glu Asp Ala Leu Ala Ser Ser His Pro Ile Ile Leu
 100 105 110 115
 tac ctg cat ggg aac gca ggt acc aga gga ggc gac cac cgc gtg gag 441
 Tyr Leu His Gly Asn Ala Gly Thr Arg Gly Gly Asp His Arg Val Glu
 116 121 126 131

ctt tac aag gtg ctg agt tcc ctt ggt tac cat gtg gtc acc ttt gac Leu Tyr Lys Val Leu Ser Ser Leu Gly Tyr His Val Val Thr Phe Asp 132 137 142 147	489
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340	


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ctaattgttt ctgtttctct ttatcatcat caaacattgc agctacgact acctgtcatt 180
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aaaacc atg agt tgt gga aat gag ttt gtg gaa aca tta aaa aaa att 468
      Met Ser Cys Gly Asn Glu Phe Val Glu Thr Leu Lys Lys Ile
        1             5             10

ggg tat ccc aaa gct gat aat ctt aat gga gaa gac ttt gac tgg ttg 516
Gly Tyr Pro Lys Ala Asp Asn Leu Asn Gly Glu Asp Phe Asp Trp Leu
  15             20             25             30
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Phe Glu Gly Val Glu Asp Glu Ser Phe Leu Lys Trp Phe Cys Gly Asn

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att ctt cag aaa tca	ggc aag cct att cta	gaa ggg gcg gca ttg gat	660	
Ile Leu Gln Lys Ser	Gly Lys Pro Ile Leu	Glu Gly Ala Ala Leu Asp		
63	68	73	78	
gaa gct ctt aaa acg	tgt aaa act tct gat	ttg aag aca cct aga ctg	708	
Glu Ala Leu Lys Thr	Cys Lys Thr Ser Asp	Leu Lys Thr Pro Arg Leu		
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gat gat aaa gag ctg	gag aaa tta gag gat	gag gtt caa act cta ctg	756	
Asp Asp Lys Glu Leu	Glu Lys Leu Glu Asp	Glu Val Gln Thr Leu Leu		
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aaa tta aag aac cta	aaa att cag cga cgt	aat aaa tgt caa ttg atg	804	
Lys Leu Lys Asn Leu	Lys Ile Gln Arg Arg	Asn Lys Cys Gln Leu Met		
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Ala Ser Val Thr Ser	His Lys Ser Leu Arg	Leu Asn Ala Lys Glu Glu		
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gaa gcc act aaa aag	ctg aag cag agt caa	gga att cta aat gca atg	900	
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caa ttg atg atg ttc	ttc aga cat tct aat	tta ggt caa ggg aca aat	996	
Gln Leu Met Met Phe	Phe Arg His Ser Asn	Leu Gly Gln Gly Thr Asn		
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Pro Leu Val Phe Leu	Ser Gln Phe Ser Leu	Glu Lys Tyr Leu Ser Gln		
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gaa gag caa agc aca	gca gca tta act ttg	tat acc aaa aaa cag ttc	1092	
Glu Glu Gln Ser Thr	Ala Ala Leu Thr Leu	Tyr Thr Lys Lys Gln Phe		
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Phe Gln Gly Ile His	Glu Val Val Glu Ser	Ser Asn Glu Asp Asn Phe		
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caa ctt tta gat ata	cag aca cca tct att	tgt gat aat caa gaa atc	1188	
Gln Leu Leu Asp Ile	Gln Thr Pro Ser Ile	Cys Asp Asn Gln Glu Ile		
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Cys Ala Gln His Gln Leu Ile His Leu Lys Ala Ser Asn Ser Ser Met	
271 276 281 286	
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Lys Ser Ser Ile Lys Trp Ala Glu Glu Ser Leu His Ser Leu Thr Ser	
287 292 297 302	
aag gct gtg gac aaa gaa aat ttg gat gct aaa att tct agc ttg acc	1380
Lys Ala Val Asp Lys Glu Asn Leu Asp Ala Lys Ile Ser Ser Leu Thr	
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agt gag att atg aaa ctt gaa aaa gag gtc act caa ata aaa gac aga	1428
Ser Glu Ile Met Lys Leu Glu Lys Glu Val Thr Gln Ile Lys Asp Arg	
319 324 329 334	
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Ser Leu Pro Ala Val Arg Glu Asn Ala Gln Leu Leu Asn Met Pro	
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Val Val Lys Gly Asp Phe Asp Leu Gln Ile Ala Lys Gln Asp Tyr Tyr	
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Thr Ala Arg Gln Glu Leu Val Leu Asn Gln Leu Ile Lys Gln Lys Ala	
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Ser Phe Glu Leu Leu Gln Leu Ser Tyr Glu Ile Glu Leu Arg Lys His	
383 388 393 398	
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Arg Asp Ile Tyr Arg Gln Leu Glu Asn Leu Val Gln Glu Leu Ser Gln	
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Ser Asn Met Met Leu Tyr Lys Gln Leu Glu Met Leu Thr Asp Pro Ser	
415 420 425 430	
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Val Ser Gln Gln Ile Asn Pro Arg Asn Thr Ile Asp Thr Lys Asp Tyr	
431 436 441 446	
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Ser Thr His Arg Leu Tyr Gln Val Leu Glu Gly Glu Asn Lys Lys Lys	
447 452 457 462	
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Lys Gln Asn Ile Ser Leu Val Gln Asp Gln Leu Ala Val Ser Ala Gln	
479 484 489 494	

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495 500 505 510	
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Cys Asp Thr Leu Tyr Gln Gly Gly Asn Gln Leu Leu Leu Ser Asp Gln	
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Glu Leu Thr Glu Gln Phe His Lys Val Glu Ser Gln Leu Asn Lys Leu	
527 532 537 542	
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Asn His Leu Leu Thr Asp Ile Leu Ala Asp Val Lys Thr Lys Arg Lys	
543 548 553 558	
act ttg gca aat aat aaa tta cat caa atg gaa aga gaa ttc tat gta	2148
Thr Leu Ala Asn Asn Lys Leu His Gln Met Glu Arg Glu Phe Tyr Val	
559 564 569 574	
tat ttt tta aaa gat gaa gat tat ctg aaa gat att gtg gag aat tta	2196
Tyr Phe Leu Lys Asp Glu Asp Tyr Leu Lys Asp Ile Val Glu Asn Leu	
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Glu Thr Gln Ser Lys Ile Lys Ala Val Ser Leu Glu Asp *	
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ctttgtctcc gggctcatcc accatc atg atc cat gac ttg tgc ctc gtc ttc	233
Met Ile His Asp Leu Cys Leu Val Phe	
1 5 /	
ccg gcc cca gcc aag gct gtc gtt tac gtg tgc gac att cag gag ctg	281
Pro Ala Pro Ala Lys Ala Val Val Tyr Val Ser Asp Ile Gln Glu Leu	

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Tyr Ile Arg Val Val Asp Lys Val Glu Ile Gly Lys Thr Val Lys Ala				
26	31	36	41	
tac gtc cgc gtg ctg gac ttg cac aag aag ccc ttc ctt gcc aaa tac				377
Tyr Val Arg Val Leu Asp Leu His Lys Lys Pro Phe Leu Ala Lys Tyr				
42	47	52	57	
ttc ccc ttt atg gac ctg aag ctc cga gca gcc tcc ccg atc att aca				425
Phe Pro Phe Met Asp Leu Lys Leu Arg Ala Ala Ser Pro Ile Ile Thr				
58	63	68	73	
ttg gtg gcc ctt gat gaa gcc ctt gac aac tac acc atc aca ttc ctc				473
Leu Val Ala Leu Asp Glu Ala Leu Asp Asn Tyr Thr Ile Thr Phe Leu				
74	79	84	89	
atc cgc ggt gtg gcc atc ggc cag acc agt cta act gca agt gtg acc				521
Ile Arg Gly Val Ala Ile Gly Gln Thr Ser Leu Thr Ala Ser Val Thr				
90	95	100	105	
aat aaa gct gga cag aga atc aac tca gcc cca caa cag att gaa gtc				569
Asn Lys Ala Gly Gln Arg Ile Asn Ser Ala Pro Gln Gln Ile Glu Val				
106	111	116	121	
ttt ccc ccg ttc agg ctg atg ccc agg aag gtg aca ctg ctt atc ggg				617
Phe Pro Pro Phe Arg Leu Met Pro Arg Lys Val Thr Leu Leu Ile Gly				
122	127	132	137	
gcc acg atg cag gtc acc tcc gag ggc ggc ccc cag cct cag tcc aac				665
Ala Thr Met Gln Val Thr Ser Glu Gly Gly Pro Gln Pro Gln Ser Asn				
138	143	148	153	
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Ile Leu Phe Ser Ile Ser Asn Glu Ser Val Ala Leu Val Ser Ala Ala				
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ggg ctg gta cag ggc ctc gcc atc ggg aac ggc act gtg tct ggg ctc				761
Gly Leu Val Gln Gly Leu Ala Ile Gly Asn Gly Thr Val Ser Gly Leu				
170	175	180	185	
gtg cag gca gtg gat gca gag acc ggc aag gtg gtc atc atc tct cag				809
Val Gln Ala Val Asp Ala Glu Thr Gly Lys Val Val Ile Ile Ser Gln				
186	191	196	201	
gac ctc gtg cag gtg gag gtg ctg ctg cta agg gcc gtg agg atc cgc				857
Asp Leu Val Gln Val Glu Val Leu Leu Leu Arg Ala Val Arg Ile Arg				
202	207	212	217	
gcc ccc atc atg cgg atg agg acg ggc acc cag atg ccc atc tat gtc				905
Ala Pro Ile Met Arg Met Arg Thr Gly Thr Gln Met Pro Ile Tyr Val				
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Thr Gly Ile Thr Asn His Gln Asn Pro Phe Ser Phe Gly Asn Ala Val				
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474 479 484 489	
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Val Arg Thr Val Ser Val Gly Leu Thr Leu Leu Arg Val Trp Asp Ala	
490 495 500 505	
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Glu His Pro Gly Leu Ser Asp Phe Met Pro Leu Pro Val Leu Gln Ala	
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His Leu Arg Thr Tyr Lys Glu Val Val Val Ser Val Pro Gln Arg Ile	
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682 687 692 697	
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Thr	Val	Ala	Phe	Val	Met	Asp	Arg	Arg	Gly	Pro	Gly	Pro	Tyr	Gly	Ala		
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agc	ctc	ttc	cag	cac	ttc	ctg	gat	tcc	tac	cag	gtc	atg	ttc	ttc	acg	2777	
Ser	Leu	Phe	Gln	His	Phe	Leu	Asp	Ser	Tyr	Gln	Val	Met	Phe	Phe	Thr		
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Leu	Phe	Ala	Leu	Leu	Ala	Gly	Thr	Ala	Val	Met	Ile	Ile	Ala	Tyr	His		
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Thr	Val	Cys	Thr	Pro	Arg	Asp	Leu	Ala	Val	Pro	Ala	Ala	Leu	Thr	Pro		
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Arg	Ala	Ser	Pro	Gly	His	Ser	Pro	His	Tyr	Phe	Ala	Ala	Ser	Ser	Pro		
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Thr	Ser	Pro	Asn	Ala	Leu	Pro	Pro	Ala	Arg	Lys	Ala	Ser	Pro	Pro	Ser		
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Gly	Leu	Trp	Ser	Pro	Ala	Tyr	Ala	Ser	His	*							

922

927

932

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Lys Val Arg Phe Ile Val Arg Gly Cys Gly Gln Tyr Ile Ser Tyr Arg
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Cys Gln Glu Lys Arg Asn Thr Tyr Phe Ala Glu Tyr Trp Tyr Gln Ala
26                      31                      36                      41

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Gln Cys Cys Gln Tyr Asp Tyr Cys Asn Ser Trp Ser Ser Pro Gln Leu
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cag agc tct ctg ccg gag ccc cat gac agg ccc ctg gcc ctg cct ctg      1204

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Pro	Leu	Pro	Asn	Phe	His	Ala	Gly	Thr	Glu	Pro	Asp	Gly	Leu	Asp	Pro	
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atg	gtc	aca	ctg	tcc	ctg	aac	ctg	ggc	ttg	tct	ttt	gct	gag	ctg	cgc	1348
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Arg	Met	Tyr	Leu	Phe	Leu	Asn	Ser	Ser	Gly	Leu	Leu	Val	Leu	Pro	Gln	
122					127					132					137	
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Ala	Gly	Leu	Leu	Thr	Pro	His	Pro	Ser	*							
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Ile	Arg	Ser	Arg	Pro	Glu	Arg	Ser	Glu	Leu	Val	Arg	Met	His	Ile	Leu		
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Glu	Glu	Thr	Ser	Ala	Glu	Pro	Ser	Leu	Gln	Ala	Lys	Gln	Leu	Lys	Leu		
46					51					56					61		
aag	aga	gcc	aga	cta	gcc	gat	gac	ctc	aat	gag	aag	att	gca	cag	agg		241
Lys	Arg	Ala	Arg	Leu	Ala	Asp	Asp	Leu	Asn	Glu	Lys	Ile	Ala	Gln	Arg		
62					67					72					77		
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Pro	Gly	Pro	Met	Glu	Leu	Val	Glu	Lys	Asn	Ile	Leu	Pro	Val	Glu	Ser		
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Ser	Leu	Lys	Glu	Ala	Ile	Ile	Val	Gly	Gln	Val	Asn	Tyr	Pro	Lys	Val		
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Ala	Asp	Ser	Ser	Ser	Phe	Asp	Glu	Asp	Ser	Ser	Asp	Ala	Leu	Ser	Pro		
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Glu	Gln	Pro	Ala	Ser	His	Glu	Ser	Gln	Gly	Ser	Val	Pro	Ser	Pro	Leu		
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Glu	Ala	Arg	Val	Ser	Glu	Pro	Leu	Leu	Ser	Ala	Thr	Ser	Ala	Ser	Pro		
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Thr	Gln	Val	Val	Ser	Gln	Leu	Pro	Met	Gly	Arg	Asp	Ser	Arg	Glu	Met		
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Leu	Phe	Leu	Ala	Glu	Gln	Pro	Pro	Leu	Pro	Pro	Pro	Pro	Leu	Leu	Pro		
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Thr	Leu	Ile	Lys	Gln	Ser	Gln	Pro	Lys	Ser	Ala	Ser	Glu	Lys	Ser	Gln		
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Tyr	His	Gln	Tyr	Ile	Pro	Pro	Asp	Gln	Lys	Gln	Asp	Arg	Gly	Ala	Pro		

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Leu Gln Leu Gln Ile Leu Asn Gln Gln Gln Gln Gln His His Asn Tyr				
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Gln Ala Ile Leu Pro Ala Pro Pro Lys Ser Ala Gly Glu Ala Leu Gly				
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Thr Ser Leu Thr Gly Lys Pro Gly Ala Leu Pro Ala Asn Leu Asp Asp				
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Val Ser Gly Thr Lys Thr Glu Leu Ile Glu Arg Leu Arg Ala Tyr Gln				
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Asp Gln Ile Ser Pro Val Pro Gly Ala Pro Lys Ala Pro Ala Ala Thr				
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Ser Ile Leu His Lys Ala Gly Glu Val Val Val Ala Phe Pro Ala Ala				
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Arg Leu Ser Thr Gly Pro Ala Leu Val Ala Ala Gly Leu Ala Pro Ala				
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Glu Val Val Val Ala Thr Val Ala Ser Ser Gly Val Val Lys Phe Gly				
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Ser Thr Gly Ser Thr Pro Pro Val Ser Pro Thr Pro Ser Glu Arg Ser				
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Leu Leu Ser Thr Gly Asp Glu Asn Ser Thr Pro Gly Asp Thr Phe Gly				
462	467	472	477	

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Arg Gln Lys Gln Gln Leu Val Glu Arg Leu Lys Leu Gln Leu Glu Gln	
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926 931

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Val Lys Ala Ile Gly Arg Lys Ala Glu Ala Leu His Asn Ile Trp Leu	
117 122 127 132	
ggc agg ggc caa tat ggt gac aaa agc atc att gag cag gct gaa gac	607
Gly Arg Gly Gln Tyr Gly Asp Lys Ser Ile Ile Glu Gln Ala Glu Asp	
133 138 143 148	
ttc ctc cag gcc agt cac cag cag cca gtg cag tat agc aac cct cac	655
Phe Leu Gln Ala Ser His Gln Gln Pro Val Gln Tyr Ser Asn Pro His	
149 154 159 164	
atc atc ttt gca ttt tac aac agt gtc tcc agc ccc atg gca gag aag	703
Ile Ile Phe Ala Phe Tyr Asn Ser Val Ser Ser Pro Met Ala Glu Lys	
165 170 175 180	
ctg aaa gaa atg ggc ata tct gtg aga gga gac ata gta gca gtc aac	751
Leu Lys Glu Met Gly Ile Ser Val Arg Gly Asp Ile Val Ala Val Asn	
181 186 191 196	
gct ctg tta gat cac cct gaa gag ctt caa cca agt gag agt gaa tca	799
Ala Leu Leu Asp His Pro Glu Glu Leu Gln Pro Ser Glu Ser Glu Ser	
197 202 207 212	
gat gat gag ggc cct gaa ctt ttg cag gtg acc aga gtt gac cga gaa	847
Asp Asp Glu Gly Pro Glu Leu Leu Gln Val Thr Arg Val Asp Arg Glu	
213 218 223 228	
aat ata cta gca agt gtt gcg ttt cca aca gaa att aag gtc gat gtg	895
Asn Ile Leu Ala Ser Val Ala Phe Pro Thr Glu Ile Lys Val Asp Val	
229 234 239 244	
tgc aaa aga gta aat ctg gac att act act tta atc aca tat gta tct	943
Cys Lys Arg Val Asn Leu Asp Ile Thr Thr Leu Ile Thr Tyr Val Ser	
245 250 255 260	

gcc ctc agc tat gga ggc tgc cac ttt att ttc aaa gag aaa gtg ctc	991
Ala Leu Ser Tyr Gly Gly Cys His Phe Ile Phe Lys Glu Lys Val Leu	
261 266 271 276	
aca gaa caa gca gag caa gag agg aaa gag cag gtt cta cct cag ctg	1039
Thr Glu Gln Ala Glu Gln Glu Arg Lys Glu Gln Val Leu Pro Gln Leu	
277 282 287 292	
gag gcc ttt atg aag gac aag gag ttg ttt gct tgt gaa tct gct gtc	1087
Glu Ala Phe Met Lys Asp Lys Glu Leu Phe Ala Cys Glu Ser Ala Val	
293 298 303 308	
aag gac ttt cag tct att tta gat acc tta gga gga cct ggg gag aga	1135
Lys Asp Phe Gln Ser Ile Leu Asp Thr Leu Gly Gly Pro Gly Glu Arg	
309 314 319 324	
gag agg gcc act gtg tta att aag cga att aat gtg gta cca gac cag	1183
Glu Arg Ala Thr Val Leu Ile Lys Arg Ile Asn Val Val Pro Asp Gln	
325 330 335 340	
cct tct gag cgt gcc ttg aga cta gtg gcc agt tca aaa att aat agc	1231
Pro Ser Glu Arg Ala Leu Arg Leu Val Ala Ser Ser Lys Ile Asn Ser	
341 346 351 356	
cgc tca tta aca att ttt ggg acg gga gac acc cta aaa gcc atc aca	1279
Arg Ser Leu Thr Ile Phe Gly Thr Gly Asp Thr Leu Lys Ala Ile Thr	
357 362 367 372	
atg act gct aat agt ggt ttt gtc aga gct gca aac aac cag ggt gtt	1327
Met Thr Ala Asn Ser Gly Phe Val Arg Ala Ala Asn Asn Gln Gly Val	
373 378 383 388	
aaa ttt agt gtg ttt atc cat cag ccc aga gca ctt act gag agt aaa	1375
Lys Phe Ser Val Phe Ile His Gln Pro Arg Ala Leu Thr Glu Ser Lys	
389 394 399 404	
gag gct cta gcc acc ccc tta cca aaa gac tac aca act gac agt gaa	1423
Glu Ala Leu Ala Thr Pro Leu Pro Lys Asp Tyr Thr Thr Asp Ser Glu	
405 410 415 420	
cac taa agataccctt taaatatttt tgtggaagta agttatttat accaaaggct	1479
His *	
421	
gggtcttccc atctaaactg gtgggaaaaa aggtctatag taaaagtaaa actgagaact	1539
cttaaaccag tagagtttct ttgtctctca tctaaagtat ataacctccc aaagtagaaa	1599
aagcacaaga gagaagctta tctatcaaac tgtctgcatt agtgcaatta agaaccgaaa	1659
tacgtctata taaagctttc agctgtattg taatactttg attcgatagg gctacaactc	1719
ccctactgct aaccacattt catggaatat ggctacattg catcttgcac taaatatctg	1779
gagaaaaaaaa aaaaaa	1795

<210> 865
 <211> 769
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (239) .. (625)

<400> 865
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 atttttaggtt taaaaagcaa ccagattcat ctcagcagct tttgtagttt taaataagca 120
 aggagtttct ccagcgaaac ttcctcacac ctcttggtct tgggtctcttc agacactttc 180
 ctctctgttc tctggagatc ttgcagaaaa gagcctgcag tgtttccctt gctcagcc 238
 atg ctc ctg gag ctt atc cca ctg ctg ggg ata cat ttt gtc ctg aga 286
 Met Leu Leu Glu Leu Ile Pro Leu Leu Gly Ile His Phe Val Leu Arg
 1 5 10 15
 act gcc aga gcc cag tca gtg acc cag cct gac atc cac atc act gtc 334
 Thr Ala Arg Ala Gln Ser Val Thr Gln Pro Asp Ile His Ile Thr Val
 17 22 27 32
 tct gaa gga gcc tca ctg gag ttg aga tgt aac tat tcc tat ggg gca 382
 Ser Glu Gly Ala Ser Leu Glu Leu Arg Cys Asn Tyr Ser Tyr Gly Ala
 33 38 43 48
 aca cct tat ctc ttc tgg atg gaa aga act gtt gaa gaa gct ttt ata 430
 Thr Pro Tyr Leu Phe Trp Met Glu Arg Thr Val Glu Glu Ala Phe Ile
 49 54 59 64
 ctt ctt gtt tgc ttg aag cct tgg agg gta gca agt agt ctg gag aaa 478
 Leu Leu Val Cys Leu Lys Pro Trp Arg Val Ala Ser Ser Leu Glu Lys
 65 70 75 80
 aag gag aag gag gat gaa tct ttc cag ctg cta ctt ggc tca cgc tat 526
 Lys Glu Lys Glu Asp Glu Ser Phe Gln Leu Leu Leu Gly Ser Arg Tyr
 81 86 91 96
 aat gta tta aag gca cac tgt ctt cta cct ttg ata aga tgg cta act 574
 Asn Val Leu Lys Ala His Cys Leu Leu Pro Leu Ile Arg Trp Leu Thr
 97 102 107 112
 tca ggt gac tca ctg tta tca gct cag cca cat tgc cca cag gga ctg 622
 Ser Gly Asp Ser Leu Leu Ser Ala Gln Pro His Cys Pro Gln Gly Leu
 113 118 123 128
 tga tggg cactttatgc gaatcttaaa ggaggttctt gcagcatgag aggtcttctc 679
 *
 129
 agcgtccggc tctgcagtg cacccacacc aggttctctgc gctgtacagt ggccagcagt 739

gtcctccagc acttccattt ttgcgtggta

769

<210> 866
<211> 1024
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (519) .. (980)

<400> 866
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ttgtgctggac tggccggatc tgctgtcagt cagcgggaac agacttctcc ctctccatct 120
gggtcaactgc gggagaaaaa ttttcgagaa tttccagcag gcaaggcagt ggccgctttg 180
actgcttgct tcggagatcc gagacgacgg agaaggcact cttatttacc gaccaagaaa 240
gctcctcccc cgctctccgt tagctaatta aaacattttt cagggacgta gccatccaga 300
gggatttgct tcctaaggag aagaacttgg aaactctgtt gaccttggct tttctagaaa 360
tagataaagc cttttcgagt catgcccggc tgtctgctga tgcaactctt ctgacctctg 420
ggactactgc aacagtagcc ctattgctgag atggtattga actgggttga gccagtgttg 480
gggacagccg ggctattttg tgtagaaaag gaaaaccc atg aag ctg acc att 533
Met Lys Leu Thr Ile
1
gac cat act cca gaa aga aaa gat gaa aaa gaa agg atc aag aaa tgt 581
Asp His Thr Pro Glu Arg Lys Asp Glu Lys Glu Arg Ile Lys Lys Cys
6 11 16 21
ggg ggt ttt gta gct tgg aat agt ttg ggg cag cct cac gta aat ggc 629
Gly Gly Phe Val Ala Trp Asn Ser Leu Gly Gln Pro His Val Asn Gly
22 27 32 37
agg ctt gca atg aca aga agt att gga gat ttg gac ctt aag acc agt 677
Arg Leu Ala Met Thr Arg Ser Ile Gly Asp Leu Asp Leu Lys Thr Ser
38 43 48 53
ggg gtc ata gca gaa cct gaa act aag agg att aag tta cat cat gct 725
Gly Val Ile Ala Glu Pro Glu Thr Lys Arg Ile Lys Leu His His Ala
54 59 64 69
gat gac agc ttc ctg gtc ctc acc aca gat gga att aac ttc atg gtg 773
Asp Asp Ser Phe Leu Val Leu Thr Thr Asp Gly Ile Asn Phe Met Val
70 75 80 85
aat agt caa gag att tgt gac ttt gtc aat cag tgc cat gat ccc aac 821
Asn Ser Gln Glu Ile Cys Asp Phe Val Asn Gln Cys His Asp Pro Asn

86	91	96	101	
gaa gca gcc cat gcg gtg act gaa cag gca ata cag tac ggt act gag				869
Glu Ala Ala His Ala Val Thr Glu Gln Ala Ile Gln Tyr Gly Thr Glu				
102	107	112	117	
gat aac agt act gca gta gta gtg cct ttt ggt gcc tgg gga aaa tat				917
Asp Asn Ser Thr Ala Val Val Val Pro Phe Gly Ala Trp Gly Lys Tyr				
118	123	128	133	
aag aac tct gaa atc aac ttc tca ttc agc aga agc ttt gcc tcc agt				965
Lys Asn Ser Glu Ile Asn Phe Ser Phe Ser Arg Ser Phe Ala Ser Ser				
134	139	144	149	
gga cga tgg gcc tga ttaccagctg ggacttagag tttctgtgca acagtttttc				1020
Gly Arg Trp Ala *				
150				
actg				1024

<210> 867
 <211> 1326
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> CDS
 <222> (307)..(1068)

<400> 867	
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agcaggacct gggttctctcc ctctctcttc cgccaccct cgtcggcgtc tgccccgcgc	120
ccgccatagc gacggcaacg ggcgctgcgg agtgctccga gccgtgaggg cggggccggc	180
gcgatgcccc gcccttcga tagctcatct ttgcgcgtcg cagtcgcgcg gagcccggct	240
tccgacgtgc agcctggcag tgcagtgagc tgtctggcct tttgtccttg atccttggtt	300
aaggaa atg acc aac cag tac ggt att ctc ttc aaa caa gag caa gcc	348
Met Thr Asn Gln Tyr Gly Ile Leu Phe Lys Gln Glu Gln Ala	
1 5 10	
cat gat gat gcc att tgg tca gtt gct tgg ggg aca aac aag aag gaa	396
His Asp Asp Ala Ile Trp Ser Val Ala Trp Gly Thr Asn Lys Lys Glu	
15 20 25 30	
aac tct gag aca gtg gtc aca ggc tcc cta gat gac ctg gtg aag gtc	444
Asn Ser Glu Thr Val Val Thr Gly Ser Leu Asp Asp Leu Val Lys Val	
31 36 41 46	
/	
tgg aaa tgg cgt gat gag agg ctg gac cta cag tgg agt ctg gag gga	492
Trp Lys Trp Arg Asp Glu Arg Leu Asp Leu Gln Trp Ser Leu Glu Gly	

47	52	57	62	
cat cag ctg gga gtg gtg tct gtg gac atc agc cac acc ctg ccc att				540
His Gln Leu Gly Val Val Ser Val Asp Ile Ser His Thr Leu Pro Ile				
63	68	73	78	
gct gca tcc agc tct ctt gat gct cat att cgt ctt tgg gac ttg gaa				588
Ala Ala Ser Ser Ser Leu Asp Ala His Ile Arg Leu Trp Asp Leu Glu				
79	84	89	94	
aat ggc aaa cag ata aag tcc ata gat gca gga cct gtg gat gcc tgg				636
Asn Gly Lys Gln Ile Lys Ser Ile Asp Ala Gly Pro Val Asp Ala Trp				
95	100	105	110	
act ttg gcc ttt tct cct gat tcc cag tat ctg gcc aca gga act cat				684
Thr Leu Ala Phe Ser Pro Asp Ser Gln Tyr Leu Ala Thr Gly Thr His				
111	116	121	126	
gtc ggg aaa gtg aac att ttt ggt gtg gaa agt ggg aaa aag gaa tat				732
Val Gly Lys Val Asn Ile Phe Gly Val Glu Ser Gly Lys Lys Glu Tyr				
127	132	137	142	
tct ttg gac acg aga gga aaa ttc att ttt agt att gca tat agt cct				780
Ser Leu Asp Thr Arg Gly Lys Phe Ile Phe Ser Ile Ala Tyr Ser Pro				
143	148	153	158	
gat ggg aaa tac cta gcc agt gga gcc ata gat gga atc atc aat att				828
Asp Gly Lys Tyr Leu Ala Ser Gly Ala Ile Asp Gly Ile Ile Asn Ile				
159	164	169	174	
ttt gat att gca act gga aaa ctt ctg cat acc ctg gaa ggc cat gcc				876
Phe Asp Ile Ala Thr Gly Lys Leu Leu His Thr Leu Glu Gly His Ala				
175	180	185	190	
ctg ccc att cgc tcc ttg acc ttt tcc ccg gac tcc cag ctc ctt gtc				924
Leu Pro Ile Arg Ser Leu Thr Phe Ser Pro Asp Ser Gln Leu Leu Val				
191	196	201	206	
act gct tca gat gat ggc tac atc aag atc tat gat gtg tgt cgc ttc				972
Thr Ala Ser Asp Asp Gly Tyr Ile Lys Ile Tyr Asp Val Cys Arg Phe				
207	212	217	222	
ttg ctg ctc tca agc cct act ccc cat gct tct gct tct agc ttg ctg				1020
Leu Leu Leu Ser Ser Pro Thr Pro His Ala Ser Ala Ser Ser Leu Leu				
223	228	233	238	
gga gct ggg aaa ctg acc aag cat gga aaa cta cag caa tgc tca taa				1068
Gly Ala Gly Lys Leu Thr Lys His Gly Lys Leu Gln Gln Cys Ser *				
239	244	249	254	
caggctaataa ggctctgggg aagaaggcat ttcaacagca gaaaagagga agaagaggga				1128
gaagagaaaa tggagaaaca agaaataagc caacacaaaa gaggggtgaa gaaaagagag				1188
ggtgcaaaaag agaacaaagt aaaaacaaaa acaaaacaaa aaggacaaac aaatccccaa				1248
agaactctcc aacggcaggt ttcttgatg ctccaccctt cttataata aagaaggaaa				1308

tggaaaaaaa aaaaaaaa

1326

<210> 868
<211> 1292
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (370)..(1089)

<400> 868
gcctgcacgt accggtccgg aattcccggg tcgaccacag cgtccgctgg gagtgagagc 60
tcctgggact ttctgtttcc agggcagggg ctgggatgat ggcgcgggag aggctgtgtc 120
ctcgcgtgtc acccaccagc cctcgagcag aggcaggctt ggagtctgca gccaccctgg 180
gaatgtctgt gcttcctcgt ggagctgaca tgatggtgaa ataggttcaa tcctccacct 240
accaggggcc cagacccttc cctggtctac cgacctgatg tggaccaga ggtggccaaa 300
gacaaggcca gcttcgggaa ctacacgtca ggtccctcc tggaccgtgt cttcaccacc 360
tacaagctc atg cac acg cac cag aca gtg gac ttc gtc agg agc aag 408
Met His Thr His Gln Thr Val Asp Phe Val Arg Ser Lys
1 5 10
cat gcc cag ttt ggg ggc ttc tcc tac aag aaa atg aca gtc atg gag 456
His Ala Gln Phe Gly Gly Phe Ser Tyr Lys Lys Met Thr Val Met Glu
14 19 24 29
gcc gtg gac ctg ctg gat ggg ctg gtg gat gag tcg gac ccg gac gta 504
Ala Val Asp Leu Leu Asp Gly Leu Val Asp Glu Ser Asp Pro Asp Val
30 35 40 45
gat ttc ccc aac tcc ttc cat gcc ttc cag aca gcg gag ggc atc cgg 552
Asp Phe Pro Asn Ser Phe His Ala Phe Gln Thr Ala Glu Gly Ile Arg
46 51 56 61
aag gcc cac cca gac aag gac tgg ttc cac ctc gtc ggg ctc ctg cac 600
Lys Ala His Pro Asp Lys Asp Trp Phe His Leu Val Gly Leu Leu His
62 67 72 77
gac ctg ggg aag gtc ctg gcc ctg ttc ggg gag ccc cag tgg gct gtc 648
Asp Leu Gly Lys Val Leu Ala Leu Phe Gly Glu Pro Gln Trp Ala Val
78 83 88 93
gtc ggc gac acc ttc ccc gtc gga tgc cgt ccg cag gcc tcc gtg gtt 696
Val Gly Asp Thr Phe Pro Val Gly Cys Arg Pro Gln Ala Ser Val Val
94 99 104 109
ttc tgc gac tcc acc ttc cag gac aac cct gac ctc cag gat cct cga 744

Phe Cys Asp Ser Thr	Phe Gln Asp Asn Pro	Asp Leu Gln Asp Pro Arg	
110	115	120	125
tac agc aca gag ctc	ggg atg tat cag ccc	cac tgt ggg ctc gac agg	792
Tyr Ser Thr Glu Leu	Gly Met Tyr Gln Pro	His Cys Gly Leu Asp Arg	
126	131	136	141
gtc ctc atg tcc tgg	ggc cat gat gag tac	atg tac cag gtg atg aag	840
Val Leu Met Ser Trp	Gly His Asp Glu Tyr	Met Tyr Gln Val Met Lys	
142	147	152	157
ttt aac aag ttc tca	ctg ccc cct gag gct	ttc tac atg atc cgg ttc	888
Phe Asn Lys Phe Ser	Leu Pro Pro Glu Ala	Phe Tyr Met Ile Arg Phe	
158	163	168	173
cac tcc ttc tac ccc	tgg cac acg ggc cgc	gac tac cag cag ctg tgc	936
His Ser Phe Tyr Pro	Trp His Thr Gly Arg	Asp Tyr Gln Gln Leu Cys	
174	179	184	189
agc cag cag gac ctg	gcc atg ctg ccc tgg	gtg cgg gag ttc aac aag	984
Ser Gln Gln Asp Leu	Ala Met Leu Pro Trp	Val Arg Glu Phe Asn Lys	
190	195	200	205
ttc gac ctc tac acc	aag tgc ccg gac ctg	ccg gac gtg gac aag ctg	1032
Phe Asp Leu Tyr Thr	Lys Cys Pro Asp Leu	Pro Asp Val Asp Lys Leu	
206	211	216	221
cgg ccc tac tac cag	ggg ctc att gac aag	tac tgc cct ggc atc ctg	1080
Arg Pro Tyr Tyr Gln	Gly Leu Ile Asp Lys	Tyr Cys Pro Gly Ile Leu	
222	227	232	237
agc tgg tga ccctcct	gccacccaag ctgctgctgg	acctaggcct ggcctccgc	1136
Ser Trp *			
238			
ctgcctgcag aggccctggcc	ctgggcaaac agccgccatc	agggttcacc tcggtggggg	1196
accccaactca ccccttagg	gtcgccaccc ctcacggcaa	cttgctgctg gcgtcaataa	1256
agacctggaa ggatgttgtg	aaaaaaaaa aaaaaa		1292

<210> 869
 <211> 2532
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1) .. (2532)

<400> 869	
atg gaa agg aca gca gag gct ctg gct gct	aaa gag aaa gtg aaa atg
Met Glu Arg Thr Ala Glu Ala Leu Ala Ala	Lys Glu Lys Val Lys Met
1	5 10

cag gcc tcg ggc tac cag cct gac ctt tcc tac aac ctg gct ttg gcc	768
Gln Ala Ser Gly Tyr Gln Pro Asp Leu Ser Tyr Asn Leu Ala Leu Ala	
241 246 251 256	
tat tac agc agc cga cag tat gct tca gca ctg aag cat atc gct gag	816
Tyr Tyr Ser Ser Arg Gln Tyr Ala Ser Ala Leu Lys His Ile Ala Glu	
257 262 267 272	
att att gag cgt ggc atc cgc cag cac cct gag cta ggt gtg ggc atg	864
Ile Ile Glu Arg Gly Ile Arg Gln His Pro Glu Leu Gly Val Gly Met	
273 278 283 288	
acc act gag ggc att gat gtt cgc agt gtt ggc aac acc tta gtc ctc	912
Thr Thr Glu Gly Ile Asp Val Arg Ser Val Gly Asn Thr Leu Val Leu	
289 294 299 304	
cat cag act gct ctg gtg gaa gcc ttc aac ctt aag gca gct ata gaa	960
His Gln Thr Ala Leu Val Glu Ala Phe Asn Leu Lys Ala Ala Ile Glu	
305 310 315 320	
tac caa ctg aga aac tat gag gca gct caa gaa gcc ctc act gac atg	1008
Tyr Gln Leu Arg Asn Tyr Glu Ala Ala Gln Glu Ala Leu Thr Asp Met	
321 326 331 336	
cca ccc agg gca gag gaa gag ttg gac cct gtg acc cta cac aac cag	1056
Pro Pro Arg Ala Glu Glu Glu Leu Asp Pro Val Thr Leu His Asn Gln	
337 342 347 352	
gca cta atg aac atg gat gcc agg cct aca gaa ggg ttt gaa aag cta	1104
Ala Leu Met Asn Met Asp Ala Arg Pro Thr Glu Gly Phe Glu Lys Leu	
353 358 363 368	
cag ttt ttg ctc caa cag aat ccc ttt cct cca gag act ttt ggc aac	1152
Gln Phe Leu Leu Gln Gln Asn Pro Phe Pro Pro Glu Thr Phe Gly Asn	
369 374 379 384	
ctg ttg ctg ctc tac tgt aaa tat gag tat ttt gac ctg gca gca gat	1200
Leu Leu Leu Leu Tyr Cys Lys Tyr Glu Tyr Phe Asp Leu Ala Ala Asp	
385 390 395 400	
gtc ctg gca gaa aat gcc cat ttg att tat aag ttc ctc aca ccc tat	1248
Val Leu Ala Glu Asn Ala His Leu Ile Tyr Lys Phe Leu Thr Pro Tyr	
401 406 411 416	
ctc tat gac ttc ttg gac gct gtg atc act tgc cag aca gct cct gaa	1296
Leu Tyr Asp Phe Leu Asp Ala Val Ile Thr Cys Gln Thr Ala Pro Glu	
417 422 427 432	
gag gct ttc att aag ctt gat ggg cta gca ggg atg ctg act gag cag	1344
Glu Ala Phe Ile Lys Leu Asp Gly Leu Ala Gly Met Leu Thr Glu Gln	
433 438 443 448	
ctt cgg aga ctc acc aag caa gta cag gaa gca aga cac aac aga gat	1392
Leu Arg Arg Leu Thr Lys Gln Val Gln Glu Ala Arg His Asn Arg Asp	
449 454 459 464	
gat gaa gct atc aaa aag gca gtg aat gaa tat gat gaa acc atg gag	1440

Asp Glu Ala Ile Lys Lys Ala Val Asn Glu Tyr Asp Glu Thr Met Glu	
465 470 475 480	
aaa tac att cct gtg ttg atg gct cag gca aaa atc tac tgg aat ctt	1488
Lys Tyr Ile Pro Val Leu Met Ala Gln Ala Lys Ile Tyr Trp Asn Leu	
481 486 491 496	
gaa aat tat cca atg gtg gaa aag atc ttc cgc aaa tct gtg gaa ttc	1536
Glu Asn Tyr Pro Met Val Glu Lys Ile Phe Arg Lys Ser Val Glu Phe	
497 502 507 512	
tgt aac gac cat gat gtg tgg aag ttg aat gtg gct cat gtt ctg ttc	1584
Cys Asn Asp His Asp Val Trp Lys Leu Asn Val Ala His Val Leu Phe	
513 518 523 528	
atg cag gaa aac aaa tac aaa gaa gcc att ggt ttc tat gaa ccc ata	1632
Met Gln Glu Asn Lys Tyr Lys Glu Ala Ile Gly Phe Tyr Glu Pro Ile	
529 534 539 544	
gtc aag aag cat tat gat aac atc ctg aat gtc agt gct att gta ctg	1680
Val Lys Lys His Tyr Asp Asn Ile Leu Asn Val Ser Ala Ile Val Leu	
545 550 555 560	
gct aat ctc tgt gtt tcc tat att atg aca agt caa aat gaa gaa gca	1728
Ala Asn Leu Cys Val Ser Tyr Ile Met Thr Ser Gln Asn Glu Glu Ala	
561 566 571 576	
gag gag ttg atg agg aag att gaa aag gag gaa gag cag ctc tct tat	1776
Glu Glu Leu Met Arg Lys Ile Glu Lys Glu Glu Glu Gln Leu Ser Tyr	
577 582 587 592	
gat gac cca gat aag aaa atg tac cat ctc tgc att gtg aat ttg gtg	1824
Asp Asp Pro Asp Lys Lys Met Tyr His Leu Cys Ile Val Asn Leu Val	
593 598 603 608	
ata gga act ctt tat tgt gcc aaa gga aat tat gac ttt ggt att tct	1872
Ile Gly Thr Leu Tyr Cys Ala Lys Gly Asn Tyr Asp Phe Gly Ile Ser	
609 614 619 624	
cga gtt atc aaa agc ttg gaa cct tac aac aaa aag ctg gga aca gac	1920
Arg Val Ile Lys Ser Leu Glu Pro Tyr Asn Lys Lys Leu Gly Thr Asp	
625 630 635 640	
acc tgg tat tat gcc aaa aga tgc ttc ctg tcc ttg tta gaa aac atg	1968
Thr Trp Tyr Tyr Ala Lys Arg Cys Phe Leu Ser Leu Leu Glu Asn Met	
641 646 651 656	
tca aaa cac aca atc atg ctt cgt gat agt gta att cac gaa tgt gtc	2016
Ser Lys His Thr Ile Met Leu Arg Asp Ser Val Ile His Glu Cys Val	
657 662 667 672	
cag ttt cta gaa cac tgt gaa ctt cat ggc aga aac ata cct gct gtt	2064
Gln Phe Leu Glu His Cys Glu Leu His Gly Arg Asn Ile Pro Ala Val	
673 678 683 688	
att gaa caa ccc ctg gaa gaa gaa aga atg cat gca gcg gac aga tcc	2112
Ile Glu Gln Pro Leu Glu Glu Glu Arg Met His Ala Ala Asp Arg Ser	

689	694	699	704	
agc tgt ggc agt ttc	tgc tgg agc tgc tgg	ctg acc gcg cga acg	cg	2160
Ser Cys Gly Ser Phe	Cys Trp Ser Cys Trp	Leu Thr Ala Arg Thr	Arg	
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Leu His Arg Val Gly	Gly Arg Ser Arg Arg	Val Gln Ala His Gly	Pro	
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Gly Arg Gly Gly Ala	Ala Val Gly Arg Ala	Gln Glu Gln Ala Gln	His	
737	742	747	752	
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Glu Leu Arg Gln Ala	Glu Pro Arg Pro Ala	Ile Tyr Tyr Asp Lys	Asn	
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Ile Met Ser Lys Val	His Gly Lys Arg Tyr	Ala Tyr Arg Phe Asp	Phe	
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Gln Gly Leu Ala Gln	Asp Gly Ala Leu Tyr	Lys Leu Pro Ala Gly	Leu	
785	790	795	800	
gac ccg ctg ccc ttc	ccc ggc ctc tcc aaa	ctc aac ctc atg gcc	gcc	2448
Asp Pro Leu Pro Phe	Pro Gly Leu Ser Lys	Leu Asn Leu Met Ala	Ala	
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tgc ctg gag gtc gcg	ccg acg gct tct cct	act ggc cgg gcc ggt	gcc	2496
Ser Leu Glu Val Ala	Pro Thr Ala Ser Pro	Thr Gly Arg Ala Gly	Ala	
817	822	827	832	
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aagtggatac ttgcagcacc tgaactcact gcaatagcaa taggaggtgg ct atg	415
	Met
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aaa tta tta gag aag tat agt ata tac cac agt aac ttt ttg cca ctc	463
Lys Leu Leu Glu Lys Tyr Ser Ile Tyr His Ser Asn Phe Leu Pro Leu	
2 7 12 17	
tca ctt aat act gca tct tta cat ttg ttt cct cgt gcc gaa ttc ggc	511
Ser Leu Asn Thr Ala Ser Leu His Leu Phe Pro Arg Ala Glu Phe Gly	
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Thr Arg Ile Thr Gly Ser Met Gly Pro Gln Gly Ala Leu Gly Pro Pro	
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Gly Val Pro Gly Ala Lys Gly Glu Arg Gly Glu Arg Gly Asp Leu Gln	
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Ile Gln Ser His Met Ala Arg Tyr Thr Ala Ile Leu Asn Gln Ile Pro	
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Thr Pro Gly Phe Pro Gly Asn Ala Gly Val Pro Gly Thr Pro Gly Glu	
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Arg Gly Leu Thr Gly Ile Lys Gly Glu Lys Gly Asn Pro Gly Val Gly	
146 151 156 161	
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Thr Gln Gly Pro Arg Gly Pro Pro Gly Pro Ala Gly Pro Ser Gly Glu	
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Ser Arg Pro Gly Ser Pro Gly Pro Pro Gly Ser Pro Gly Pro Arg Gly	

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1

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 Val Phe Leu Val Leu Lys Asp Phe Gly Pro Glu Glu Asn Phe Asp Ala
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 Ser Glu Glu Ala Ala Arg Gly Arg Asp Leu Arg Gly Arg Gly Arg Gly
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 Thr Pro Arg Gly Gly Arg Lys Gly Leu Leu Pro Thr Pro Asp Glu Phe
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 cct cgc ttt gaa gga ggg cgg aag cca gat tcc tgg gat gga aac aga 541
 Pro Arg Phe Glu Gly Gly Arg Lys Pro Asp Ser Trp Asp Gly Asn Arg
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 gag cct ggg cca ggt cat gaa cat ttt cgt gat act ccc cgc cct gat 589
 Glu Pro Gly Pro Gly His Glu His Phe Arg Asp Thr Pro Arg Pro Asp
 76 81 86 91

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His Pro Pro His Asp Gly His Ser Pro Ala Ser Arg Glu Arg Ser Ser	
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Ser Leu Gln Gly Met Asp Met Ala Ser Leu Pro Pro Arg Lys Arg Pro	
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Trp His Asp Gly Pro Gly Thr Ser Glu His Arg Glu Met Glu Ala Pro	
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Gly Gly Pro Ser Glu Asp Arg Gly Gly Lys Gly Arg Gly Gly Pro Gly	
140 145 150 155	
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Pro Ala Gln Arg Val Pro Lys Ser Gly Arg Ser Ser Ser Leu Asp Gly	
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Glu His His Asp Gly Tyr His Arg Asp Glu Pro Phe Gly Gly Pro Pro	
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Arg Gly Ser Asn Met Asn Ser Gly Pro Pro Arg Arg Gly Ala Ser Arg	
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                  1                    5
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Gly His Ala Leu Tyr Leu Ala Phe Leu Ala Arg Lys Glu Gly Thr Lys
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cgc ggc ttc ctg agt aag aag acg gcc gag gcg agc cgc tgg cac gag      269
Arg Gly Phe Leu Ser Lys Lys Thr Ala Glu Ala Ser Arg Trp His Glu
  26                      31                      36                      41
aag tgg ttc gcc ctc tac cag aat gtg ctc ttc tac ttc gag ggc gag      317
Lys Trp Phe Ala Leu Tyr Gln Asn Val Leu Phe Tyr Phe Glu Gly Glu
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Gln Ser Cys Arg Pro Ala Gly Met Tyr Leu Leu Glu Gly Cys Ser Cys
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gaa cga acg ccc gcg cca ccc agg gcc ggc gcc ggg cag gga ggc gtc      413
Glu Arg Thr Pro Ala Pro Pro Arg Ala Gly Ala Gly Gln Gly Gly Val
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cga gac gcg ctg gac aag cag tat tac ttt act gtt ctt ttt ggc cat      461
Arg Asp Ala Leu Asp Lys Gln Tyr Tyr Phe Thr Val Leu Phe Gly His
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gaa ggt cag aag cca ctg gag ctg cgc tgt gag gag gag cag gat ggt      509
Glu Gly Gln Lys Pro Leu Glu Leu Arg Cys Glu Glu Glu Gln Asp Gly
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aaa gag tgg atg gag gcc att cac caa gcc agt tat gca gac att ttg      557
Lys Glu Trp Met Glu Ala Ile His Gln Ala Ser Tyr Ala Asp Ile Leu
  122                      127                      132                      137
att gag agg gaa gta tta atg cag aag tac att cat cta gtt cag atc      605
Ile Glu Arg Glu Val Leu Met Gln Lys Tyr Ile His Leu Val Gln Ile
  138                      143                      148                      153
gta gag aca gaa aaa att gca gct aac caa ctc cga cat caa ctt gaa      653
Val Glu Thr Glu Lys Ile Ala Ala Asn Gln Leu Arg His Gln Leu Glu
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gat caa gac aca gaa atc gaa agg ctt aaa tca gag att att gct ctt      701
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Glu Asp Pro Asp Ile Lys Lys Ile Lys Lys Val Gln Ser Phe Met Arg				
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Cys Ser Pro His Ala Glu Ser Met Arg Lys Arg Asn Gln Ile Val Phe				
234	239	244	249	
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Thr Met Val Glu Ala Glu Ser Glu Tyr Val His Gln Leu Tyr Ile Leu				
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Val Asn Gly Phe Leu Arg Pro Leu Arg Met Ala Ala Ser Ser Lys Lys				
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Pro Pro Ile Ser His Asp Asp Val Ser Ser Ile Phe Leu Asn Ser Glu				
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Ile Ala Asn Trp Pro Thr Leu Ile Leu Ala Asp Leu Phe Asp Ile Leu				
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346	351	356	361	
ctc tta aaa cag tat gaa gcc aat cca gcc tgt gag ggg agg atg ctg				1277
Leu Leu Lys Gln Tyr Glu Ala Asn Pro Ala Cys Glu Gly Arg Met Leu				
362	367	372	377	
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Glu Thr Phe Leu Thr Tyr Pro Met Phe Gln Ile Pro Arg Tyr Ile Ile				
378	383	388	393	
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Thr Leu His Glu Leu Leu Ala His Thr Pro His Glu His Val Glu Arg				
394	399	404	409	

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Lys Ser Leu Glu Phe Ala Lys Ser Lys Leu Glu Glu Leu Ser Arg Val	
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ctg	gat	aaa	aac	gaa	aga	act	cct	tac	att	atg	aaa	acc	agc	caa	cac	3293	
Leu	Asp	Lys	Asn	Glu	Arg	Thr	Pro	Tyr	Ile	Met	Lys	Thr	Ser	Gln	His		
1034					1039					1044					1049		
ttc	aat	gac	atg	agt	aac	ctg	gtg	gcc	tcc	cag	ata	atg	aac	tat	gct	3341	
Phe	Asn	Asp	Met	Ser	Asn	Leu	Val	Ala	Ser	Gln	Ile	Met	Asn	Tyr	Ala		
1050					1055					1060					1065		
gat	gtc	agc	tcc	cgt	gcc	aac	gcc	atc	gag	aaa	tgg	gtg	gca	gtg	gcg	3389	
Asp	Val	Ser	Ser	Arg	Ala	Asn	Ala	Ile	Glu	Lys	Trp	Val	Ala	Val	Ala		
1066					1071					1076					1081		
gac	atc	tgc	cga	tgc	ctg	cac	aac	tac	aac	ggc	gtg	ctg	gag	atc	acc	3437	
Asp	Ile	Cys	Arg	Cys	Leu	His	Asn	Tyr	Asn	Gly	Val	Leu	Glu	Ile	Thr		

1082	1087	1092	1097	
tcg gcc tta aac aga agt gcc atc tac agg ctg aag aaa acc tgg gcc				3485
Ser Ala Leu Asn Arg Ser Ala Ile Tyr Arg Leu Lys Lys Thr Trp Ala				
1098	1103	1108	1113	
aag gtc tct aag cag aca aaa gct cta atg gac aaa ctt caa aag act				3533
Lys Val Ser Lys Gln Thr Lys Ala Leu Met Asp Lys Leu Gln Lys Thr				
1114	1119	1124	1129	
gtt tcc tct gaa gga aga ttt aaa aat ctt aga gaa acc ctt aaa aat				3581
Val Ser Ser Glu Gly Arg Phe Lys Asn Leu Arg Glu Thr Leu Lys Asn				
1130	1135	1140	1145	
tgt aac cct cct gca gtt cct tat ctt ggg atg tac ttg aca gac ctg				3629
Cys Asn Pro Pro Ala Val Pro Tyr Leu Gly Met Tyr Leu Thr Asp Leu				
1146	1151	1156	1161	
gca ttt att gaa gaa gga aca cca aac ttt act gag gaa ggc ctt gtc				3677
Ala Phe Ile Glu Glu Gly Thr Pro Asn Phe Thr Glu Glu Gly Leu Val				
1162	1167	1172	1177	
aat ttc tcc aaa atg aga atg ata tca cac atc atc aga gag ata cgc				3725
Asn Phe Ser Lys Met Arg Met Ile Ser His Ile Ile Arg Glu Ile Arg				
1178	1183	1188	1193	
cag ttc cag cag act tcc tac aga ata gat cat cag cca aag gtc gca				3773
Gln Phe Gln Gln Thr Ser Tyr Arg Ile Asp His Gln Pro Lys Val Ala				
1194	1199	1204	1209	
cag tac ttg ctt gac aaa gac ctt atc ata gat gaa gat acg cta tat				3821
Gln Tyr Leu Leu Asp Lys Asp Leu Ile Ile Asp Glu Asp Thr Leu Tyr				
1210	1215	1220	1225	
gag ctg tca ctc aaa att gaa cct cga ctc cct gct				3860
Glu Leu Ser Leu Lys Ile Glu Pro Arg Leu Pro Ala *				
1226	1231	1236		

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 <213> Homo sapiens

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 <222> (194)..(1057)

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gctgcggccg gtacacgccg gggtagggcc ggggtcgggt tgtggtcggg ccgggattgg	180

gctctcctgg gcc	atg gca gcc gag gcg cgc gtg tcg cgc tgg tac ttc	229
	Met Ala Ala Glu Ala Arg Val Ser Arg Trp Tyr Phe	
	1 5 10	
ggg ggg ctg gcc tcc tgc ggg gcc gcc tgc tgc acg cac ccg ctg gac	277	
Gly Gly Leu Ala Ser Cys Gly Ala Ala Cys Cys Thr His Pro Leu Asp		
13 18 23 28		
ctg ctc aag gtg cat ctg cag acg cag cag gag gtg aag ctg cgc atg	325	
Leu Leu Lys Val His Leu Gln Thr Gln Gln Glu Val Lys Leu Arg Met		
29 34 39 44		
acg ggc atg gcg ctg cgg gtg gtg cgt acc gac ggc atc ctg gca ctc	373	
Thr Gly Met Ala Leu Arg Val Val Arg Thr Asp Gly Ile Leu Ala Leu		
45 50 55 60		
tac agc ggc ctg agc gcc tcg ctg tgc aga cag atg acc tac tcc ctg	421	
Tyr Ser Gly Leu Ser Ala Ser Leu Cys Arg Gln Met Thr Tyr Ser Leu		
61 66 71 76		
act cgg ttc gcc atc tac gag act gtg cgg gac cgt gtg gcc aag ggc	469	
Thr Arg Phe Ala Ile Tyr Glu Thr Val Arg Asp Arg Val Ala Lys Gly		
77 82 87 92		
agc cag ggg cct ctc ccc ttc cac gag aag gtg ttg ctg ggc tcc gtc	517	
Ser Gln Gly Pro Leu Pro Phe His Glu Lys Val Leu Leu Gly Ser Val		
93 98 103 108		
agc ggt tta gct gga ggc ttc gtg ggg acg ccc gca gac ttg gtc aac	565	
Ser Gly Leu Ala Gly Gly Phe Val Gly Thr Pro Ala Asp Leu Val Asn		
109 114 119 124		
gtc agg atg cag aac gac gtg aag ctg ccc cag ggt cag cgg cgc aac	613	
Val Arg Met Gln Asn Asp Val Lys Leu Pro Gln Gly Gln Arg Arg Asn		
125 130 135 140		
tac gcc cat gcg ctg gat ggc ctg tac cgc gta gct cgt gaa gag ggt	661	
Tyr Ala His Ala Leu Asp Gly Leu Tyr Arg Val Ala Arg Glu Glu Gly		
141 146 151 156		
ctc agg aga ctg ttc tcg ggt gca acc atg gca tcc agc cga ggg gcc	709	
Leu Arg Arg Leu Phe Ser Gly Ala Thr Met Ala Ser Ser Arg Gly Ala		
157 162 167 172		
tta gtc act gtg ggc cag ctg tcc tgc tac gac cag gcc aag cag ctg	757	
Leu Val Thr Val Gly Gln Leu Ser Cys Tyr Asp Gln Ala Lys Gln Leu		
173 178 183 188		
gtc ctt agc acc ggg tac ctc tct gac aac atc ttc act cac ttt gtc	805	
Val Leu Ser Thr Gly Tyr Leu Ser Asp Asn Ile Phe Thr His Phe Val		
189 194 199 204		
gcc agc ttt att gca ggt gga tgt gcc acg ttc ctg tgc cag ccc ctg	853	
Ala Ser Phe Ile Ala Gly Gly Cys Ala Thr Phe Leu Cys Gln Pro Leu		
205 210 215 220		

gat gtg ctg aag act cgc ctg atg aac tcc aag ggg gag tat cag ggc	901
Asp Val Leu Lys Thr Arg Leu Met Asn Ser Lys Gly Glu Tyr Gln Gly	
221 226 231 236	
gtt ttc cac tgc gcc gtg gag aca gcg aag ctc ggg cct ctg gcc ttt	949
Val Phe His Cys Ala Val Glu Thr Ala Lys Leu Gly Pro Leu Ala Phe	
237 242 247 252	
tac aag ggc ctc gtc cca gct ggc atc cgc ctc atc ccc cac acc gtg	997
Tyr Lys Gly Leu Val Pro Ala Gly Ile Arg Leu Ile Pro His Thr Val	
253 258 263 268	
ctc act ttt gtg ttt ctg gaa cag cta cgc aaa aac ttt ggc atc aaa	1045
Leu Thr Phe Val Phe Leu Glu Gln Leu Arg Lys Asn Phe Gly Ile Lys	
269 274 279 284	
gtg cca tcc tga cca gccgtgggaa tggctgggct gccaggccag acacgctagg	1100
Val Pro Ser *	
285	
ttcttccaaa gagtcccaag cccagcacct gctcctgggg ccacgacctc cctggccgtg	1160
gccaccatc ctccgcagca ggccccctgct gtccccccac ctgctggctg agctcctcct	1220
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gttctggagc cattgtgggt gagggtcgag ggccaccgag gtcccgcgca ccgctgcctg	1700
ccctgcagtg gctttaacag ttagttttgc caaagcctct ccaactacca gcaggcggtc	1760
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ccgacggggc ggatgctgca tcctctgcct ccctggctgc tgggcttcac cccacctggg	1940
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aaa	2003

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<211> 713

<212> DNA
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<400> 875

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gcctctcctc aggggggtgtt gtgaccacagc ccctgcttca taagggtcaag gttggatggc    120
cagccgtgg   atg gca ggg ctg gag gct tgg ctt tca cag aac ttc tcc      168
             Met Ala Gly Leu Glu Ala Trp Leu Ser Gln Asn Phe Ser
             1             5             10

ctc cac caa cct cag agc cga gtc cgt gtg agg cgg gca agc atc tct      216
Leu His Gln Pro Gln Ser Arg Val Arg Val Arg Ala Ser Ile Ser
 14             19             24             29

gaa ccc agt gat acg gac ccg gag ccc cga act ctg aac ccc tct ccg      264
Glu Pro Ser Asp Thr Asp Pro Glu Pro Arg Thr Leu Asn Pro Ser Pro
 30             35             40             45

gct gga tgg ttc gtg cag cag cac ccg gag ctg gag ctc atg agc agc      312
Ala Gly Trp Phe Val Gln Gln His Pro Glu Leu Glu Leu Met Ser Ser
 46             51             56             61

ttc cgg gaa cgg ttc ggc cgc aac tgg ctg cag tac agg agt cac ctg      360
Phe Arg Glu Arg Phe Gly Arg Asn Trp Leu Gln Tyr Arg Ser His Leu
 62             67             72             77

gag ccc tcc gga aac cct ctg ccg gcc acc ccc act act tct gca ccc      408
Glu Pro Ser Gly Asn Pro Leu Pro Ala Thr Pro Thr Thr Ser Ala Pro
 78             83             88             93

agt gca cct cca gcc agc tcc cag ggc ccc gac act gca ccc aga cct      456
Ser Ala Pro Pro Ala Ser Ser Gln Gly Pro Asp Thr Ala Pro Arg Pro
 94             99             104            109

tca ccc ccg cag gag gaa gcc aga ggc ccc cag gag tca cca cag aaa      504
Ser Pro Pro Gln Glu Glu Ala Arg Gly Pro Gln Glu Ser Pro Gln Lys
110             115             120             125

atg tca gag gag gtc agg gcg gag cca cag gag gag gaa gag gag aag      552
Met Ser Glu Glu Val Arg Ala Glu Pro Gln Glu Glu Glu Glu Lys
126             131             136             141

gag ggg aag gag gag aag gag gag ggg gag atg gcg cca cac cgt gaa      600
Glu Gly Lys Glu Glu Lys Glu Glu Gly Glu Met Ala Pro His Arg Glu
142             147             152             157

gct cac ctg ggt gag tgg aaa cag aaa gag tgc cct tag aagtataata      649
Ala His Leu Gly Glu Trp Lys Gln Lys Glu Cys Pro *
158             163             168

ctggagagtg ccactcttat caacgcttta cgaatacccc ccgactgagg ggggaataca    709

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 <211> 783
 <212> DNA
 <213> Homo sapiens

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 <222> (260)..(610)

<400> 876

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gagctccgggg aggcagggcc ggccccacgt cctctgcgca ccaccctgag ttggatcctc      180
tgtgcgccac ccctgagttg gatccagggc tagctgctgt tgacctcccc actcccacgc      240
tgccctcctg cctgcagcc atg acg ccc ctg ctc acc ctg atc ctg gtg gtc      292
          Met Thr Pro Leu Leu Thr Leu Ile Leu Val Val
          1              5

ctc atg ggc tta cct ctg gcc cag gcc ttg gac tgc cac gtg tgt gcc      340
Leu Met Gly Leu Pro Leu Ala Gln Ala Leu Asp Cys His Val Cys Ala
  12              17              22              27

tac aac gga gac aac tgc ttc aac ccc atg cgc tgc ccg gct atg gtt      388
Tyr Asn Gly Asp Asn Cys Phe Asn Pro Met Arg Cys Pro Ala Met Val
  28              33              38              43

gcc tac tgc atg acc acg cgc acc tac tac acc ccc acc agg atg aag      436
Ala Tyr Cys Met Thr Thr Arg Thr Tyr Tyr Thr Pro Thr Arg Met Lys
  44              49              54              59

gtc agt aag tcc tgc gtg ccc cgc tgc ttc gag act gtg tat gat ggc      484
Val Ser Lys Ser Cys Val Pro Arg Cys Phe Glu Thr Val Tyr Asp Gly
  60              65              70              75

tac tcc aag cac gcg tcc acc acc tcc tgc tgc cag tac gac ctc tgc      532
Tyr Ser Lys His Ala Ser Thr Thr Ser Cys Cys Gln Tyr Asp Leu Cys
  76              81              86              91

aac ggc acc ggc ctt gcc acc ccg gcc acc ctg gcc ctg gcc ccc atc      580
Asn Gly Thr Gly Leu Ala Thr Pro Ala Thr Leu Ala Leu Ala Pro Ile
  92              97              102              107

ctc ctg gcc acc ctt tgg ggt ctc ctc taa a gcccccgagg cagaccact      631
Leu Leu Ala Thr Leu Trp Gly Leu Leu *
108              113

caagaacaaa gctctcgaga cacaatgtta caccgtggga ctcagctgac cctgcctcac      691

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 gggacgtggtt ttccacactg aaaaaaaaaa aa 783

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 <222> (360) .. (1742)

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 tccctgggga gacctatggg ccgaagccgt gtaaatacgt tttaagcaga ggcctcggct 180
 ccgcaactgc cactcctcct cgggggtgttg cacaagtctc gaggtcaccg gcgaccccc 240
 ctagcagcgc gcctggctct gggccccgcg aaggaggacg gagtttgtgt gttgcatact 300
 ttctaaggcg gcggtgcag cagcggctcc atccagcccg tcagctcctc ctgcaaggc 359
 atg gct ggc tac ctg agt gaa tcg gac ttt gtg atg gtg gag gag ggc 407
 Met Ala Gly Tyr Leu Ser Glu Ser Asp Phe Val Met Val Glu Glu Gly
 1 5 10 15
 ttc agt acc cga gac ctg ctg aag gaa ctc act ctg ggg gcc tca cag 455
 Phe Ser Thr Arg Asp Leu Leu Lys Glu Leu Thr Leu Gly Ala Ser Gln
 17 22 27 32
 gcc acc acg gac gag gta gct gcc ttc ttc gtg gct gac ctg ggt gcc 503
 Ala Thr Thr Asp Glu Val Ala Ala Phe Phe Val Ala Asp Leu Gly Ala
 33 38 43 48
 ata gtg agg aag cac ttt tgc ttt ctg aag tgc ctg cca cga gtc cgg 551
 Ile Val Arg Lys His Phe Cys Phe Leu Lys Cys Leu Pro Arg Val Arg
 49 54 59 64
 ccc ttt tat gct gtc aag tgc aac agc agc cca ggt gtg ctg aag gtt 599
 Pro Phe Tyr Ala Val Lys Cys Asn Ser Ser Pro Gly Val Leu Lys Val
 65 70 75 80
 ctg gcc cag ctg ggg ctg ggc ttt agc tgt gcc aac aag gca gag atg 647
 Leu Ala Gln Leu Gly Leu Gly Phe Ser Cys Ala Asn Lys Ala Glu Met
 81 86 91 96
 gag ttg gtc cag cat att gga atc cct gcc agt aag atc atc tgc gcc 695
 Glu Leu Val Gln His Ile Gly Ile Pro Ala Ser Lys Ile Ile Cys Ala
 97 102 107 112

aac ccc tgt aag caa att gca cag atc aaa tat gct gcc aag cat ggg	743
Asn Pro Cys Lys Gln Ile Ala Gln Ile Lys Tyr Ala Ala Lys His Gly	
113 118 123 128	
atc cag ctg ctg agc ttt gac aat gag atg gag ctg gca aag gtg gta	791
Ile Gln Leu Leu Ser Phe Asp Asn Glu Met Glu Leu Ala Lys Val Val	
129 134 139 144	
aag agc cac ccc agt gcc aag atg gtt ctg tgc att gct acc gat gac	839
Lys Ser His Pro Ser Ala Lys Met Val Leu Cys Ile Ala Thr Asp Asp	
145 150 155 160	
tcc cac tcc ctg agc tgc ctg agc cta aag ttt gga gtg tca ctg aaa	887
Ser His Ser Leu Ser Cys Leu Ser Leu Lys Phe Gly Val Ser Leu Lys	
161 166 171 176	
tcc tgc aga cac ctg ctt gaa aat gcg aag aag cac cat gtg gag gtg	935
Ser Cys Arg His Leu Leu Glu Asn Ala Lys Lys His His Val Glu Val	
177 182 187 192	
gtg ggt gtg agt ttt cac att ggc agt ggc tgt cct gac cct cag gcc	983
Val Gly Val Ser Phe His Ile Gly Ser Gly Cys Pro Asp Pro Gln Ala	
193 198 203 208	
tat gct cag tcc atc gca gac gcc cgg ctc gtg ttt gaa atg ggc acc	1031
Tyr Ala Gln Ser Ile Ala Asp Ala Arg Leu Val Phe Glu Met Gly Thr	
209 214 219 224	
gag ctg ggt cac aag atg cac gtt ctg gac ctt ggt ggt ggc ttc cct	1079
Glu Leu Gly His Lys Met His Val Leu Asp Leu Gly Gly Gly Phe Pro	
225 230 235 240	
ggc aca gaa ggg gcc aaa gtg aga ttt gaa gag att gct tcc gtg atc	1127
Gly Thr Glu Gly Ala Lys Val Arg Phe Glu Glu Ile Ala Ser Val Ile	
241 246 251 256	
aac tca gcc ttg gac ctg tac ttc cca gag ggc tgt ggc gtg gac atc	1175
Asn Ser Ala Leu Asp Leu Tyr Phe Pro Glu Gly Cys Gly Val Asp Ile	
257 262 267 272	
ttt gct gag ctg ggg cgc tac tac gtg acc tcg gcc ttc act gtg gca	1223
Phe Ala Glu Leu Gly Arg Tyr Tyr Val Thr Ser Ala Phe Thr Val Ala	
273 278 283 288	
gtc agc atc att gcc aag aag gag gtt ctg cta gac cag cct ggc agg	1271
Val Ser Ile Ile Ala Lys Lys Glu Val Leu Leu Asp Gln Pro Gly Arg	
289 294 299 304	
gag gag gaa aat ggt tcc acc tcc aag acc atc gtg tac cac ctt gat	1319
Glu Glu Glu Asn Gly Ser Thr Ser Lys Thr Ile Val Tyr His Leu Asp	
305 310 315 320	
gag ggc gtg tat ggg atc ttc aac tca gtc ctg ttt gac aac atc tgc	1367
Glu Gly Val Tyr Gly Ile Phe Asn Ser Val Leu Phe Asp Asn Ile Cys	
321 326 331 336	
cct acc ccc atc ctg cag aag aaa cca tcc acg gag cag ccc ctg tac	1415

Pro Thr Pro Ile Leu Gln Lys Lys Pro Ser Thr Glu Gln Pro Leu Tyr	
337 342 347 352	
agc agc agc ctg tgg ggc ccg gcg gtt gat ggc tgt gat tgc gtg gct	1463
Ser Ser Ser Leu Trp Gly Pro Ala Val Asp Gly Cys Asp Cys Val Ala	
353 358 363 368	
gag ggc ctg tgg ctg ccg caa cta cac gta ggg gac tgg ctg gtc ttt	1511
Glu Gly Leu Trp Leu Pro Gln Leu His Val Gly Asp Trp Leu Val Phe	
369 374 379 384	
gac aac atg ggc gcc tac act gtg ggc atg ggt tcc ccc ttt tgg ggg	1559
Asp Asn Met Gly Ala Tyr Thr Val Gly Met Gly Ser Pro Phe Trp Gly	
385 390 395 400	
acc cag gcc tgc cac atc acc tat gcc atg tcc cgg gtg gcc tgg gaa	1607
Thr Gln Ala Cys His Ile Thr Tyr Ala Met Ser Arg Val Ala Trp Glu	
401 406 411 416	
gcg ctg cga agg cag ctg atg gct gca gaa cag gag gat gac gtg gag	1655
Ala Leu Arg Arg Gln Leu Met Ala Ala Glu Gln Glu Asp Asp Val Glu	
417 422 427 432	
ggg gtg tgc aag cct ctg tcc tgc ggc tgg gag atc aca gac acc ctg	1703
Gly Val Cys Lys Pro Leu Ser Cys Gly Trp Glu Ile Thr Asp Thr Leu	
433 438 443 448	
tgc gtg ggc cct gtc ttc acc cca gcg agc atc atg tga gtggtcctcg	1752
Cys Val Gly Pro Val Phe Thr Pro Ala Ser Ile Met *	
449 454 459	
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gcaggcaagg gtacccttgg ccaggactct ggtgccacc ctgccacccc cgcgctccac	1872
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aacataaaatc ctgttccttc cagctgtgtc tgccctctct gcagtgcaag gggcctggtc	1992
agccaggtgt ggggggtgttc ttgggggtctc ctttgggtctc cttccacact ttgtaaatat	2052
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<400> 878
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 gttccgcgcc ccgcccgcgc cggcgcgtag cgaacgcggg gccgtgtggc ggccccgagcc 240
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 Met Met Arg Cys Cys Arg Arg Arg Cys Cys Cys
 1 5

cgg caa cca ccc cat gcc ctg agg ccg ttg ctg ttg ctg ccc ctc gtc 520
 Arg Gln Pro Pro His Ala Leu Arg Pro Leu Leu Leu Leu Pro Leu Val
 12 17 22 27

ctt tta cct ccc ctg gca gca gct gca gcg ggc cca aac cga tgt gac 568
 Leu Leu Pro Pro Leu Ala Ala Ala Ala Ala Gly Pro Asn Arg Cys Asp
 28 33 38 43

acc ata tac cag ggc ttc gcc gag tgt ctc atc cgc ttg ggg gac agc 616
 Thr Ile Tyr Gln Gly Phe Ala Glu Cys Leu Ile Arg Leu Gly Asp Ser
 44 49 54 59

atg ggc cgc gga ggc gag ctg gag acc atc tgc agg tct tgg aat gac 664
 Met Gly Arg Gly Gly Glu Leu Glu Thr Ile Cys Arg Ser Trp Asn Asp
 60 65 70 75

ttc cat gcc tgt gcc tct cag gtc ctg tca ggc tgt ccg gag gag gca 712
 Phe His Ala Cys Ala Ser Gln Val Leu Ser Gly Cys Pro Glu Glu Ala
 76 81 86 91

gct gca gtg tgg gaa tca cta cag caa gaa gct cgc cag gcc ccc cgt 760
 Ala Ala Val Trp Glu Ser Leu Gln Gln Glu Ala Arg Gln Ala Pro Arg
 92 97 102 107

ccg aat aac ttg cac act ctg tgc ggt gcc ccg gtg cat gtt cgg gag 808
 Pro Asn Asn Leu His Thr Leu Cys Gly Ala Pro Val His Val Arg Glu
 108 113 118 123

cgc ggc aca ggc tcc gaa acc aac cag gag acg ctg cgg gct aca gcg 856
 Arg Gly Thr Gly Ser Glu Thr Asn Gln Glu Thr Leu Arg Ala Thr Ala
 124 129 134 139

cct gca ctc ccc atg gcc cct gcg ccc cca ctg ctg gcg gct gct ctg 904
 Pro Ala Leu Pro Met Ala Pro Ala Pro Pro Leu Leu Ala Ala Ala Leu
 140 145 150 155

gct ctg gcc tac ctc ctg agg cct ctg gcc tag cttgttgg gttgggtagc 955
 Ala Leu Ala Tyr Leu Leu Arg Pro Leu Ala *
 156 161 166

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 gggcttttca ttaaagggtat ttatatattgt aaaaaaaaaa aa 1057

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 <222> (58) .. (330)

<400> 879

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 atg cac acg gac cct gac tac tcg gct gcc tat gtc gtc ata gaa act 105
 Met His Thr Asp Pro Asp Tyr Ser Ala Ala Tyr Val Val Ile Glu Thr
 1 5 10 15
 gat gca gaa gat gga atc aag ggg tgt gga att acc ttc act ctg gga 153
 Asp Ala Glu Asp Gly Ile Lys Gly Cys Gly Ile Thr Phe Thr Leu Gly
 17 22 27 32
 aaa ggc act gaa gtt gat tgg tcc aga aaa ggg cgt ggt gca cct ggc 201
 Lys Gly Thr Glu Val Asp Trp Ser Arg Lys Gly Arg Gly Ala Pro Gly
 33 38 43 48
 gac agc ggc cgt cct aaa cgc ggt gtg gga ctt gtg ggc caa gca gga 249
 Asp Ser Gly Arg Pro Lys Arg Gly Val Gly Leu Val Gly Gln Ala Gly
 49 54 59 64
 ggg aaa gcc tgt ctg gaa gtt act tgt gga cat gga tcc cag gat gct 297
 Gly Lys Ala Cys Leu Glu Val Thr Cys Gly His Gly Ser Gln Asp Ala
 65 70 75 80
 ggt atc ctg cat aga ttt cag gta cat cac tga tgcctga ctgaggagga 348
 Gly Ile Leu His Arg Phe Gln Val His His *
 81 86 91
 tgcctagaa atactgcaga aagggtcaaatt tggtaaaaaa gaaagagaga agcaaagtct 408
 ggcacaagga taccctgctt acacgacatc gtgcgcctgg ctgggggtact cagatgacac 468
 gttgaagcag ctctgtgccc aggcgctgaa ggatggctgg accaggttta aagtaaaggt 528
 ggggtgctgat ctccaggatg acatgcgaag atgccaaatc atccgagaca tgattggacc 588
 ggaaaagact ttgatgatgg atgccaacca gcgctgggat gtgcctgagg cggtggagtg 648
 gatgtccaag ctggccaagt tcaagccatt gtggattgag gagccaacct cccctgaaga 708
 cattctgggg cagccacca tttccaaggc actgggtccca ttaggaattg gcattggcac 768
 aggagaacag tgccacaata gattgatatt taagcaactc ctacaggcga aggcctgca 828


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gttcctccag attgacagtt gcagactggg cagtgtcaat gagaacctct cagtattgct      888
gatggccaaa aagtttgaaa ttctgttttg ccccatgct ggtggagttg gcctctgtga      948
actggtgcag cacctgatta tatttgacta catatcagtt tctgcaagcc ttgaaaatag     1008
ggtgtgtgag tatgttgacc acctgcatga gcatttcaag tatcccgtag tgatccagcg     1068
ggcttcctac atgcctccca aggatcccggt ctactcaaca gaaatgaagg aggaatctgt     1128
aaagaaacac cagtatccag atggtgaagt ttggaagaaa ctcttcctg ctcaagaaaa     1188
ttaagtgtc agccccaaca acttttttct ttctgaagtg aaagggctta aaatttcttg     1248
gaaatagttt tacaaaaatg gatttaaaaa atcctaccga tcaagatgag ttcagctaga     1308
agtcatacca ccctcaggaa tcagctaaag caaaaagaac ttttacctcg gcatccagcc     1368
caaccctaa agactgacaa tatccttcaa gctcctttga aagcacccta aacagccatt     1428
tccattttaa tagttggatg cggattgtac cttcaatct gaaagtcttc agctttgaag     1488
tcatcaattt tctcaacttt tcgaagaatc ctgagctttg ggaaaggtct gggttctcgc     1548
tgaagctaaa aacaaaataa ggccattatt ttgccataat tgtacgacct gttgtaattg     1608
ctcctcatgt ccatgaaaca agtacacagg atgtgatcaa caaagttcta ttttacagga     1668
gtatgatcct gtcgatacct tgccgtagtt atgtaacatg attggagcgc aaccagctgt     1728
tctcttgacc acagatcgag agtgaggggt attttgtgac attacacagc atcaggagcc     1788
tgggtgcctca tcaggtgtaa gttcttataa ccaactcttg caaatttatt aaagacagga     1848
acacagtcac                                     1857

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<210> 880
<211> 1405
<212> DNA
<213> Homo sapiens

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<220>
<221> CDS
<222> (366)..(1289)

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<400> 880
atgcgtacgt tagcttggat cctctagagc ggccgggtgt gagtgtgtgg gagtgagagt      60
gtgtgggagt ggggtgaggg agaagctgac gggacgcgag gcggtgagaa actgggagag      120
tgtgagagga cgcccgccca gcctgcggga gccgcagtcg gcggaggaga aaggaggcgg      180
ctcccggtat ccgaccccc tccccctct cttcttcccc cacttccagc cgcccgcgcg      240

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ccgcgcgttt ctcgaaggcc ccagcccggc tcagtcggcc gagagcgagg gaggagcccc 300

ccgacccagg tagacgttac atccaagagg aaataatcca ggcaaggaag cacaagctga 360

tcaag atg tgt agt tct gtg gct gcc aag ttg tgg ttt ttg aca gat 407
Met Cys Ser Ser Val Ala Ala Lys Leu Trp Phe Leu Thr Asp
1 5 10

cgt cgc atc agg gaa gac tat cct caa aaa gag att tta cga gca ttg 455
Arg Arg Ile Arg Glu Asp Tyr Pro Gln Lys Glu Ile Leu Arg Ala Leu
15 20 25 30

aag gcc aaa tgt tgt gag gag gaa ctg gac ttt agg gct gtg gtg atg 503
Lys Ala Lys Cys Cys Glu Glu Glu Leu Asp Phe Arg Ala Val Val Met
31 36 41 46

gat gag gtg gtg ctg aca atc gag caa gga aac ctg ggt ctg cgg atc 551
Asp Glu Val Val Leu Thr Ile Glu Gln Gly Asn Leu Gly Leu Arg Ile
47 52 57 62

aat gga gag cta atc act gcc tac cca caa gtg gtg gta gtc aga gta 599
Asn Gly Glu Leu Ile Thr Ala Tyr Pro Gln Val Val Val Val Arg Val
63 68 73 78

cca acc cct tgg gtg caa agt gat agt gac atc act gtt ttg cgc cat 647
Pro Thr Pro Trp Val Gln Ser Asp Ser Asp Ile Thr Val Leu Arg His
79 84 89 94

cta gag aag atg gga tgt cgg tta atg aac cga cct caa gcc atc ctg 695
Leu Glu Lys Met Gly Cys Arg Leu Met Asn Arg Pro Gln Ala Ile Leu
95 100 105 110

aac tgc gtt aat aag ttc tgg aca ttt caa gag ttg gct ggc cat ggt 743
Asn Cys Val Asn Lys Phe Trp Thr Phe Gln Glu Leu Ala Gly His Gly
111 116 121 126

gtt cct ctg ccg gat act ttc tct tat ggt ggc cac gaa aat ttt gct 791
Val Pro Leu Pro Asp Thr Phe Ser Tyr Gly Gly His Glu Asn Phe Ala
127 132 137 142

aaa atg att gat gag gct gaa gtt ctg gag ttc cca atg gta gta aag 839
Lys Met Ile Asp Glu Ala Glu Val Leu Glu Phe Pro Met Val Val Lys
143 148 153 158

aat acg cgg ggt cac aga ggt aaa gct gtt ttc ttg gct cga gat aag 887
Asn Thr Arg Gly His Arg Gly Lys Ala Val Phe Leu Ala Arg Asp Lys
159 164 169 174

cac cat ttg gct gat cta agc cat ctt att cgc cat gaa gcg cca tac 935
His His Leu Ala Asp Leu Ser His Leu Ile Arg His Glu Ala Pro Tyr
175 180 185 190

ktg ttc cag aag tat gtt aaa gag tct cat gga cgg gat gta cgt gtc 983
Leu Phe Gln Lys Tyr Val Lys Glu Ser His Gly Arg Asp Val Arg Val
191 196 201 206

att gtc gtg gga ggc cgt gtg gtt ggc acc atg tta cgt tgt tca aca	1031
Ile Val Val Gly Gly Arg Val Val Gly Thr Met Leu Arg Cys Ser Thr	
207 212 217 222	
gat ggg aga atg caa agc aac tgc tca tta ggt ggt gtg ggg atg atg	1079
Asp Gly Arg Met Gln Ser Asn Cys Ser Leu Gly Gly Val Gly Met Met	
223 228 233 238	
tgc tca ttg agt gaa caa ggg aag cag cta gct atc cag gtg tct aat	1127
Cys Ser Leu Ser Glu Gln Gly Lys Gln Leu Ala Ile Gln Val Ser Asn	
239 244 249 254	
atc ctg ggg atg gat gtg tgt ggc att gac ctg ctg atg aaa gat gac	1175
Ile Leu Gly Met Asp Val Cys Gly Ile Asp Leu Leu Met Lys Asp Asp	
255 260 265 270	
ggc tcc ttc tgc gtc tgt gag gcc aat gca aat cct ttt cag gag cca	1223
Gly Ser Phe Cys Val Cys Glu Ala Asn Ala Asn Pro Phe Gln Glu Pro	
271 276 281 286	
aaa aaa caa ata caa aca aac aaa aaa ata ccc aga gaa aaa act ttc	1271
Lys Lys Gln Ile Gln Thr Asn Lys Lys Ile Pro Arg Glu Lys Thr Phe	
287 292 297 302	
ctt ctt ccc cct tcc tga tgatga gtgagaagta ttgagaactt tcgggggtcag	1325
Leu Leu Pro Pro Ser *	
303 308	
tgcccttcct aactcccctt ccccaataat gcagctgtat aatgaatggg taatgcaccg	1385
gttttgattc aggcacagcc	1405

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 <211> 2412
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (67)..(1395)

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ttgcac atg ggt ccg ccc atg gag cac gga tgg tcc tac gct cgg gcg	108
Met Gly Pro Pro Met Glu His Gly Trp Ser Tyr Ala Arg Ala	
1 5 10	
ggg ggc agc tct cgg ggc tgc tgg tat tac ctg cgc tac ttc ttc ctc	156
Gly Gly Ser Ser Arg Gly Cys Trp Tyr Tyr Leu Arg Tyr Phe Phe Leu	
15 20 25 30	
ttc gtc tcc ctc atc caa ttc ctc atc atc ctg ggg ctc gtg ctc ttc	204
Phe Val Ser Leu Ile Gln Phe Leu Ile Ile Leu Gly Leu Val Leu Phe	

atg gtc tat ggc aac gtg cac gtg agc aca gag tcc aac ctg cag gcc Met Val Tyr Gly Asn Val His Val Ser Thr Glu Ser Asn Leu Gln Ala 47 52 57 62	252
acc gag cgc cga gcc gag ggc cta tac agt cag ctc cta ggg ctc acg Thr Glu Arg Arg Ala Glu Gly Leu Tyr Ser Gln Leu Leu Gly Leu Thr 63 68 73 78	300
gcc tcc cag tcc aac ttg acc aag gag ctc aac ttc acc acc cgc gcc Ala Ser Gln Ser Asn Leu Thr Lys Glu Leu Asn Phe Thr Thr Arg Ala 79 84 89 94	348
aag gat gcc atc atg cag atg tgg ctg aat gct cgc cgc gac ctg gac Lys Asp Ala Ile Met Gln Met Trp Leu Asn Ala Arg Arg Asp Leu Asp 95 100 105 110	396
cgc atc aat gcc agc ttc cgc cag tgc cag ggt gac cgg gtc atc tac Arg Ile Asn Ala Ser Phe Arg Gln Cys Gln Gly Asp Arg Val Ile Tyr 111 116 121 126	444
acg aac aat cag agg tac atg gct gcc atc atc ttg agt gag aag caa Thr Asn Asn Gln Arg Tyr Met Ala Ala Ile Ile Leu Ser Glu Lys Gln 127 132 137 142	492
tgc aga gat caa ttc aag gac atg aac aag agc tgc gat gcc ttg ctc Cys Arg Asp Gln Phe Lys Asp Met Asn Lys Ser Cys Asp Ala Leu Leu 143 148 153 158	540
ttc atg ctg aat cag aag gtg aag acg ctg gag gtg gag ata gcc aag Phe Met Leu Asn Gln Lys Val Lys Thr Leu Glu Val Glu Ile Ala Lys 159 164 169 174	588
gag aag acc att tgc act aag gat aag gaa agc gtg ctg ctg aac aaa Glu Lys Thr Ile Cys Thr Lys Asp Lys Glu Ser Val Leu Leu Asn Lys 175 180 185 190	636
cgc gtg gcg gag gaa cag ctg gtt gaa tgc gtg aaa acc cgg gag ctg Arg Val Ala Glu Glu Gln Leu Val Glu Cys Val Lys Thr Arg Glu Leu 191 196 201 206	684
cag cac caa gag cgc cag ctg gcc aag gag caa ctg caa aag gtg caa Gln His Gln Glu Arg Gln Leu Ala Lys Glu Gln Leu Gln Lys Val Gln 207 212 217 222	732
gcc ctc tgc ctg ccc ctg gac aag gac aag ttt gag atg gac ctt cgt Ala Leu Cys Leu Pro Leu Asp Lys Asp Lys Phe Glu Met Asp Leu Arg 223 228 233 238	780
aac ctg tgg agg gac tcc att atc cca cgc agc ctg gac aac ctg ggt Asn Leu Trp Arg Asp Ser Ile Ile Pro Arg Ser Leu Asp Asn Leu Gly 239 244 249 254	828
tac aac ctc tac cat ccc ctg ggc tcg gaa ttg gcc tcc atc cgc aga Tyr Asn Leu Tyr His Pro Leu Gly Ser Glu Leu Ala Ser Ile Arg Arg 255 260 265 270	876

gcc tgc gac cac atg ccc agc ctc atg agc tcc aag gtg gag gag ctg Ala Cys Asp His Met Pro Ser Leu Met Ser Ser Lys Val Glu Glu Leu 271 276 281 286	924
gcc cgg agc ctc cgg gcg gat atc gaa cgc gtg gcc cgc gag aac tca Ala Arg Ser Leu Arg Ala Asp Ile Glu Arg Val Ala Arg Glu Asn Ser 287 292 297 302	972
gac ctc caa cgc cag aag ctg gaa gcc cag cag ggc ctg cgg gcc agt Asp Leu Gln Arg Gln Lys Leu Glu Ala Gln Gln Gly Leu Arg Ala Ser 303 308 313 318	1020
cag gag gcg aaa cag aag gtg gag aag gag gct cag gcc cgg gag gcc Gln Glu Ala Lys Gln Lys Val Glu Lys Glu Ala Gln Ala Arg Glu Ala 319 324 329 334	1068
aag ctc caa gct gaa tgc tcc cgg cag acc cag cta gcg ctg gag gag Lys Leu Gln Ala Glu Cys Ser Arg Gln Thr Gln Leu Ala Leu Glu Glu 335 340 345 350	1116
aag gcg gtg ctg cgg aag gaa cga gac aac ctg gcc aag gag ctg gaa Lys Ala Val Leu Arg Lys Glu Arg Asp Asn Leu Ala Lys Glu Leu Glu 351 356 361 366	1164
gag aag aag agg gag gcg gag cag ctc agg atg gag ctg gcc atc aga Glu Lys Lys Arg Glu Ala Glu Gln Leu Arg Met Glu Leu Ala Ile Arg 367 372 377 382	1212
aac tca gcc ctg gac acc tgc atc aag acc aag tcg cag ccg atg atg Asn Ser Ala Leu Asp Thr Cys Ile Lys Thr Lys Ser Gln Pro Met Met 383 388 393 398	1260
cca gtg tca agg ccc atg ggc cct gtc ccc aac ccc cag ccc atc gac Pro Val Ser Arg Pro Met Gly Pro Val Pro Asn Pro Gln Pro Ile Asp 399 404 409 414	1308
cca gct agc ctg gag gag ttc aag agg aag atc ctg gag tcc cag agg Pro Ala Ser Leu Glu Glu Phe Lys Arg Lys Ile Leu Glu Ser Gln Arg 415 420 425 430	1356
ccc cct gca ggc atc cct gta gcc cca tcc agt ggc tga ggaggctcca Pro Pro Ala Gly Ile Pro Val Ala Pro Ser Ser Gly *	1405
431 436 441	
ggcctgagga ccaagggatg gcccgactcg gcggtttgcg gaggatgcag ggatatgctc	1465
acagcgcccg acacaacccc ctcccgccgc ccccaaccac ccagggccac catcagacaa	1525
ctccctgcat gcaaaccctt agtaccctct cacaccgcga cccgcgcctc acgatccctc	1585
accagagca cacggccgcg gagatgacgt cacgcaagca acggcgctga cgtcacatat	1645
caccgtggtg atggcgtcac gtggccatgt agacgtcacg aagagatata gcgatggcgt	1705
cgtgcagatg caggcacgtt cgcacacaga catggggaac ttggcatgac gttcacaccg	1765

agatgcagca acgacgtcac gggccatgtc gacgtcacac atattaatgt cacacagacg 1825
 cggcgatggc atcacacaga cggatgatgat gtcacacaca gacacagtga caacacacac 1885
 catgacaacg acacctatag atatggcacc aacatcacat gcacgcatgc cctttcacac 1945
 acactttcta cccaattctc acctagtgtc acgttcccc gaccctggca cacggggcaa 2005
 ggtaccacaca ggatcccatc cctcccgca cagccctggg cccagcacc tcccctcctc 2065
 cagcttcctg gcctcccagc cacttcctca ccccagtgct ctggaccgg aggtgagaac 2125
 aggaagccat tcacctccgc tccttgagcg tgagtgtttc caggaccccc tcggggccct 2185
 gagccggggg tgagggtcac ctgttgctcg gaggggagcc actccttctc cccaactcc 2245
 cagccctgcc tgtggcccg tgaatgttg gtggcactta ataatatta gtaaactctt 2305
 aagaaaacaa gacccccctg gagccctaaa acaaaagaaa agaaaaactg gggggggggg 2365
 ggttttaaaa aatttttggg gggggcccaa ttcttggtg ggggcac 2412

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 <211> 844
 <212> DNA
 <213> Homo sapiens
 <220>
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 <222> (208)..(750)

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 agctggtgac agaccactc tgtaactttc agctagattc agccaccaga tccagaaac 180
 atgacccttg ctgcctacaa agagaag atg aag gag ctc ccg ctg gtg tcc 231
 Met Lys Glu Leu Pro Leu Val Ser
 1 5
 ttg ttc tgc tcc tgc ttc ctg gcc gat ccc ctg aat aag tcg tcc tac 279
 Leu Phe Cys Ser Cys Phe Leu Ala Asp Pro Leu Asn Lys Ser Ser Tyr
 9 14 19 24
 aaa tat gaa gca gac acg gtg gac ctg aat tgg tgc gtc att tcc gac 327
 Lys Tyr Glu Ala Asp Thr Val Asp Leu Asn Trp Cys Val Ile Ser Asp
 25 30 35 40
 atg gaa gtc atc gag ctg aac aaa tgc acc tcg ggc caa tcc ttt gaa 375
 Met Glu Val Ile Glu Leu Asn Lys Cys Thr Ser Gly Gln Ser Phe Glu
 41 46 51 56

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gtc atc ctg aag cca ccc tcc ttt gat ggg gtt ccc gag ttc aac gcc      423
Val Ile Leu Lys Pro Pro Ser Phe Asp Gly Val Pro Glu Phe Asn Ala
  57                      62                      67                      72

tcc ctg cca agg cgg cga gac cca tcc ctg gaa gag atc cag aag aaa      471
Ser Leu Pro Arg Arg Arg Asp Pro Ser Leu Glu Glu Ile Gln Lys Lys
  73                      78                      83                      88

cta gaa gcg gct gag gag cga agg aag tac cag gaa gcg gag ctc ctg      519
Leu Glu Ala Ala Glu Glu Arg Arg Lys Tyr Gln Glu Ala Glu Leu Leu
  89                      94                      99                      104

aaa cac cta gca gag aaa cgg gaa cat gag aga gag gtg atc caa aag      567
Lys His Leu Ala Glu Lys Arg Glu His Glu Arg Glu Val Ile Gln Lys
 105                      110                      115                      120

gcc att gag gaa aac aac aac ttc atc aag atg gct aag gaa aaa ctg      615
Ala Ile Glu Glu Asn Asn Asn Phe Ile Lys Met Ala Lys Glu Lys Leu
 121                      126                      131                      136

gcc cag aag atg gaa tcc aac aag gag aac agg gag gcc cac ctc gcc      663
Ala Gln Lys Met Glu Ser Asn Lys Glu Asn Arg Glu Ala His Leu Ala
 137                      142                      147                      152

gcc atg ttg gaa cgg ctg caa gag aag gac aag cac gcc gag gag gtg      711
Ala Met Leu Glu Arg Leu Gln Glu Lys Asp Lys His Ala Glu Glu Val
 153                      158                      163                      168

cgg aaa aac aag gag ctg aag gaa gag gcc tcc agg taa agcctagagg      760
Arg Lys Asn Lys Glu Leu Lys Glu Glu Ala Ser Arg *
 169                      174                      179

ccaaagaact ttccaggtca gccggacagc tccagcagct ccacgttcca ggcagcctcg      820

cccgccggct gcgctcccag cact                                          844

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<210> 883
<211> 925
<212> DNA
<213> Homo sapiens

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<220>
<221> CDS
<222> (181)..(831)

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<400> 883
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gggagtgagg aagagagcag ctgcgttcta actggactgc acgttggtga cagcgtccca      120

agctggtgac agaccactc tgtaactttc agctagattc agccaccaga tcccagaaac      180

atg acc ctt gct gcc tac aaa gag aag atg aag gag ctc ccg ctg gtg      228
Met Thr Leu Ala Ala Tyr Lys Glu Lys Met Lys Glu Leu Pro Leu Val

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1	5	10	15	
tcc ttg ttc tgc tcc tgc ttc ctg gcc gat ccc ctg aat aag tcg tcc				276
Ser Leu Phe Cys Ser Cys Phe Leu Ala Asp Pro Leu Asn Lys Ser Ser				
17	22	27	32	
tac aaa tat gaa ggc tgg tgt ggg aga cag tgt agg agg aag gat gaa				324
Tyr Lys Tyr Glu Gly Trp Cys Gly Arg Gln Cys Arg Arg Lys Asp Glu				
33	38	43	48	
agc cag cgg aaa gac agt gct gac tgg aga gaa aga aga gct cag gca				372
Ser Gln Arg Lys Asp Ser Ala Asp Trp Arg Glu Arg Arg Ala Gln Ala				
49	54	59	64	
gac acg gtg gac ctg aat tgg tgc gtc att tcc gac atg gaa gtc atc				420
Asp Thr Val Asp Leu Asn Trp Cys Val Ile Ser Asp Met Glu Val Ile				
65	70	75	80	
gag ctg aac aaa tgc acc tcg ggc caa tcc ttt gaa gtc atc ctg aag				468
Glu Leu Asn Lys Cys Thr Ser Gly Gln Ser Phe Glu Val Ile Leu Lys				
81	86	91	96	
cca ccc tcc ttt gat ggg gtt ccc gag ttc aac gcc tcc ctg cca agg				516
Pro Pro Ser Phe Asp Gly Val Pro Glu Phe Asn Ala Ser Leu Pro Arg				
97	102	107	112	
cgg cga gac cca tcc ctg gaa gag atc cag aag aaa cta gaa gcg gct				564
Arg Arg Asp Pro Ser Leu Glu Glu Ile Gln Lys Lys Leu Glu Ala Ala				
113	118	123	128	
gag gag cga agg aag tac cag gaa gcg gag ctc ctg aaa cac cta gca				612
Glu Glu Arg Arg Lys Tyr Gln Glu Ala Glu Leu Leu Lys His Leu Ala				
129	134	139	144	
gag aaa cgg gaa cat gag aga gag gtg atc caa aag gcc att gag gaa				660
Glu Lys Arg Glu His Glu Arg Glu Val Ile Gln Lys Ala Ile Glu Glu				
145	150	155	160	
aac aac aac ttc atc aag atg gct aag gaa aaa ctg gcc cag aag atg				708
Asn Asn Asn Phe Ile Lys Met Ala Lys Glu Lys Leu Ala Gln Lys Met				
161	166	171	176	
gaa tcc aac aag gag aac agg gag gcc cac ctc gcc gcc atg ttg gaa				756
Glu Ser Asn Lys Glu Asn Arg Glu Ala His Leu Ala Ala Met Leu Glu				
177	182	187	192	
cgg ctg caa gag aag gac aag cac gcc gag gag gtg cgg aaa aac aag				804
Arg Leu Gln Glu Lys Asp Lys His Ala Glu Glu Val Arg Lys Asn Lys				
193	198	203	208	
gag ctg aag gaa gag gcc tcc agg taa agcct agaggccaaa gaactttcca				856
Glu Leu Lys Glu Glu Ala Ser Arg *				
209	214			
ggtcagccgg acagctccag cagctccacg ttccaggcag cctcgcccg cggctgcgct				916
cccagcact				925

<210> 884
 <211> 2758
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (91)..(1881)

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 gcgttgtggg gcaggggggtg gtggagcaag atg gcg gct cat ctg tcc tac 111
 Met Ala Ala His Leu Ser Tyr
 1 5
 ggc cga gtg aac cta aac gtg ttg cgc gag gcg gtg cgt cgc gag ctg 159
 Gly Arg Val Asn Leu Asn Val Leu Arg Glu Ala Val Arg Arg Glu Leu
 8 13 18 23
 cgc gag ttc ctg gac aag tgc gca gga agc aag gca ata gtt tgg gat 207
 Arg Glu Phe Leu Asp Lys Cys Ala Gly Ser Lys Ala Ile Val Trp Asp
 24 29 34 39
 gaa tac cta act gga ccc ttt ggc ctg att gca cag tat tca cta ttg 255
 Glu Tyr Leu Thr Gly Pro Phe Gly Leu Ile Ala Gln Tyr Ser Leu Leu
 40 45 50 55
 aag gaa cat gaa gtg gaa aaa atg ttc aca ctt aaa gga aat cgt ttg 303
 Lys Glu His Glu Val Glu Lys Met Phe Thr Leu Lys Gly Asn Arg Leu
 56 61 66 71
 ccg gca gct gat gtg aag aat ata att ttt ttt gtc aga ccc agg cta 351
 Pro Ala Ala Asp Val Lys Asn Ile Ile Phe Phe Val Arg Pro Arg Leu
 72 77 82 87
 gag ttg atg gat ata atc gct gaa aac gtg ctc agt gaa gat aga cga 399
 Glu Leu Met Asp Ile Ile Ala Glu Asn Val Leu Ser Glu Asp Arg Arg
 88 93 98 103
 ggc cca acg aga gat ttt cat att ctg ttt gtg cca cgc cgt agc ctg 447
 Gly Pro Thr Arg Asp Phe His Ile Leu Phe Val Pro Arg Arg Ser Leu
 104 109 114 119
 ttg tgc gaa cag cgg ttg aag gat ctg ggt gtc ttg gga tcc ttt att 495
 Leu Cys Glu Gln Arg Leu Lys Asp Leu Gly Val Leu Gly Ser Phe Ile
 120 125 130 135
 cac agg gag gag tac agc tta gat ctc att cca ttc gat ggg gat ctc 543
 His Arg Glu Gly Tyr Ser Leu Asp Leu Ile Pro Phe Asp Gly Asp Leu
 136 141 146 151
 tta tcc atg gaa tca gag ggt gca ttc aaa gag tgc tac ctg gag ggt 591

Leu Ser Met Glu Ser Glu Gly Ala Phe Lys Glu Cys Tyr Leu Glu Gly	
152	157 162 167
gac cag acg agc ctg tac cac gca gcc aag ggg ctg atg acc ctg caa	639
Asp Gln Thr Ser Leu Tyr His Ala Ala Lys Gly Leu Met Thr Leu Gln	
168	173 178 183
gct ctg tat gga acg atc ccc cag atc ttt ggg aaa gga gaa tgc gct	687
Ala Leu Tyr Gly Thr Ile Pro Gln Ile Phe Gly Lys Gly Glu Cys Ala	
184	189 194 199
cgg caa gtg gcc aat atg atg atc agg atg aag aga gag ttt aca gga	735
Arg Gln Val Ala Asn Met Met Ile Arg Met Lys Arg Glu Phe Thr Gly	
200	205 210 215
agc cag aat tca ata ttt cct gtt ttt gat aat ctc ttg ttg ctt gat	783
Ser Gln Asn Ser Ile Phe Pro Val Phe Asp Asn Leu Leu Leu Leu Asp	
216	221 226 231
cgg aat gtg gat tta tta aca cct ctt gcc act cag ctg aca tat gaa	831
Arg Asn Val Asp Leu Leu Thr Pro Leu Ala Thr Gln Leu Thr Tyr Glu	
232	237 242 247
gga ctc att gat gaa att tat ggc att cag aac agt tat gtg aaa tta	879
Gly Leu Ile Asp Glu Ile Tyr Gly Ile Gln Asn Ser Tyr Val Lys Leu	
248	253 258 263
cct cca gag aaa ttt gca cct aaa aaa cag ggc gat ggt ggt aag gac	927
Pro Pro Glu Lys Phe Ala Pro Lys Lys Gln Gly Asp Gly Gly Lys Asp	
264	269 274 279
ctc ccc acg gaa gca aag aag ctg cag ctg aat tct gca gag gag ctc	975
Leu Pro Thr Glu Ala Lys Lys Leu Gln Leu Asn Ser Ala Glu Glu Leu	
280	285 290 295
tat gct gag atc cga gat aag aac ttc aac gca gtt ggc tct gtg ctc	1023
Tyr Ala Glu Ile Arg Asp Lys Asn Phe Asn Ala Val Gly Ser Val Leu	
296	301 306 311
agc aag aaa gca aag atc atc tct gca gca ttc gag gaa aga cac aat	1071
Ser Lys Lys Ala Lys Ile Ile Ser Ala Ala Phe Glu Glu Arg His Asn	
312	317 322 327
gct aag acc gtg ggg gag atc aag cag ttt gtt tcc cag ttg ccc cac	1119
Ala Lys Thr Val Gly Glu Ile Lys Gln Phe Val Ser Gln Leu Pro His	
328	333 338 343
atg cag gca gca agg ggc tcg ctt gca aac cat acc tca att gca gaa	1167
Met Gln Ala Ala Arg Gly Ser Leu Ala Asn His Thr Ser Ile Ala Glu	
344	349 354 359
ttg atc aaa gat gtc act act tct gaa gac ttt ttt gat aaa tta acc	1215
Leu Ile Lys Asp Val Thr Thr Ser Glu Asp Phe Phe Asp Lys Leu Thr	
360	365 370 375
gtg gaa cag gag ttt atg tct gga ata gac act gat aag gtc aac aat	1263
Val Glu Gln Glu Phe Met Ser Gly Ile Asp Thr Asp Lys Val Asn Asn	

376	381	386	391	
tac att gag gat tgt atc gcc caa aag cac tcg ttg atc aag gtg tta				1311
Tyr Ile Glu Asp Cys Ile Ala Gln Lys His Ser Leu Ile Lys Val Leu				
392	397	402	407	
aga cta gtt tgc ctc caa tcc gtg tgt aat agt ggg ctc aaa caa aaa				1359
Arg Leu Val Cys Leu Gln Ser Val Cys Asn Ser Gly Leu Lys Gln Lys				
408	413	418	423	
gtt ttg gat tat tac aaa aga gag att ctc cag aca tac ggc tat gag				1407
Val Leu Asp Tyr Tyr Lys Arg Glu Ile Leu Gln Thr Tyr Gly Tyr Glu				
424	429	434	439	
cac ata ttg acc tta cac aac ctg gag aag gcc ggc ctg ctg aaa ccg				1455
His Ile Leu Thr Leu His Asn Leu Glu Lys Ala Gly Leu Leu Lys Pro				
440	445	450	455	
cag acg ggg ggc aga aac aat tac cca act ata cgg aaa aca tta cgc				1503
Gln Thr Gly Gly Arg Asn Asn Tyr Pro Thr Ile Arg Lys Thr Leu Arg				
456	461	466	471	
ctc tgg atg gat gat gtt aat gag caa aac ccc acg gac ata tcg tat				1551
Leu Trp Met Asp Asp Val Asn Glu Gln Asn Pro Thr Asp Ile Ser Tyr				
472	477	482	487	
gtg tac agt ggg tat gcc ccg ctc agt gtg cgg ctg gcc cag ctg ctt				1599
Val Tyr Ser Gly Tyr Ala Pro Leu Ser Val Arg Leu Ala Gln Leu Leu				
488	493	498	503	
tcc cgg cct ggc tgg cgg agc atc gag gag gtc ctc cgc atc ctc cca				1647
Ser Arg Pro Gly Trp Arg Ser Ile Glu Glu Val Leu Arg Ile Leu Pro				
504	509	514	519	
ggg ccc cac ttt gag gag cgg cag cca ctg ccc aca gga ctg cag aag				1695
Gly Pro His Phe Glu Glu Arg Gln Pro Leu Pro Thr Gly Leu Gln Lys				
520	525	530	535	
aaa cgt caa ccg gga gaa aac cga gtg act ctg ata ttt ttc ctt ggg				1743
Lys Arg Gln Pro Gly Glu Asn Arg Val Thr Leu Ile Phe Phe Leu Gly				
536	541	546	551	
ggc gta acc ttc gct gaa att gct gcc ctg cga ttt ctc tcc cag ttg				1791
Gly Val Thr Phe Ala Glu Ile Ala Ala Leu Arg Phe Leu Ser Gln Leu				
552	557	562	567	
gaa gat gga ggt aca gaa tat gtc att gcc acc act aaa cta atg aat				1839
Glu Asp Gly Gly Thr Glu Tyr Val Ile Ala Thr Thr Lys Leu Met Asn				
568	573	578	583	
gga acc agt tgg ata gag gct ctg atg gaa aaa cct ttc tag gatgttc				1888
Gly Thr Ser Trp Ile Glu Ala Leu Met Glu Lys Pro Phe *				
584	589	594		
agaggagact taacaagtgt actgcagaat aaactacctc tttgaagaaa ttgctgaaag				1948
gaagtaaaac cccatagaag aaacatggga atacagaata tattctgggg tcagcttctt				2008

aaattataact actgtttact gctttctcog tctcttttgt attccctttt ttttttcctt 2068
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 gcaacctcca cctcctaggt tcaagcaatt ctctgcctc agcctcctga gtagctggga 2188
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 agaagaatag aagaaaatca acctgagtaa aagcagcact gggttttgagt tttctaagct 2428
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 tgaaaataaa aagagaaagt tcctcctcta atccccagtg ctgtatttct tcaagggtgca 2608
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 ctgatttgag atg ggg tcc cag gtc tcg gtg gaa tcg gga gct ctg cac 169
 Met Gly Ser Gln Val Ser Val Glu Ser Gly Ala Leu His
 1 5 10
 gtg gtg att gtg ggt ggg ggc ttt ggc ggg atc gca gca gcc agc cag 217
 Val Val Ile Val Gly Gly Gly Phe Gly Gly Ile Ala Ala Ala Ser Gln
 14 19 24 29
 ctg cag gcc ctg aac gtc ccc ttc atg ctg gtg gac atg aag gac tcc 265
 Leu Gln Ala Leu Asn Val Pro Phe Met Leu Val Asp Met Lys Asp Ser
 30 35 40 45
 ttc cac cac aat gtg gct gct ctc cga gcc tcc gtg gag aca ggg ttc 313

Phe	His	His	Asn	Val	Ala	Ala	Leu	Arg	Ala	Ser	Val	Glu	Thr	Gly	Phe	
46					51					56					61	
gcc	aaa	aag	aca	ttc	att	tct	tac	tcg	gtg	act	ttc	aag	gac	aac	ttc	361
Ala	Lys	Lys	Thr	Phe	Ile	Ser	Tyr	Ser	Val	Thr	Phe	Lys	Asp	Asn	Phe	
62					67					72					77	
cgg	cag	ggg	cta	gta	gtg	ggg	ata	gac	ctg	aag	aac	cag	atg	gtg	ctg	409
Arg	Gln	Gly	Leu	Val	Val	Gly	Ile	Asp	Leu	Lys	Asn	Gln	Met	Val	Leu	
78					83					88					93	
ctg	cag	ggt	ggc	gag	gcc	ctg	ccc	ttc	tct	cat	ctt	atc	ctg	gcc	acg	457
Leu	Gln	Gly	Gly	Glu	Ala	Leu	Pro	Phe	Ser	His	Leu	Ile	Leu	Ala	Thr	
94					99					104					109	
ggc	agc	act	ggg	ccc	ttc	ccg	ggc	aag	ttt	aat	gag	gtt	tcc	agc	cag	505
Gly	Ser	Thr	Gly	Pro	Phe	Pro	Gly	Lys	Phe	Asn	Glu	Val	Ser	Ser	Gln	
110					115					120					125	
cag	gcc	gct	atc	cag	gcc	tat	gag	gac	atg	gtg	agg	cag	gtc	cag	cgc	553
Gln	Ala	Ala	Ile	Gln	Ala	Tyr	Glu	Asp	Met	Val	Arg	Gln	Val	Gln	Arg	
126					131					136					141	
tca	cgg	ttc	atc	gtg	gtg	gtg	gga	gga	ggc	tcg	gct	gga	gtg	gag	atg	601
Ser	Arg	Phe	Ile	Val	Val	Val	Gly	Gly	Gly	Ser	Ala	Gly	Val	Glu	Met	
142					147					152					157	
gca	gca	gag	att	aaa	aca	gaa	tat	cct	gag	aaa	gag	gtc	act	ctc	att	649
Ala	Ala	Glu	Ile	Lys	Thr	Glu	Tyr	Pro	Glu	Lys	Glu	Val	Thr	Leu	Ile	
158					163					168					173	
cac	tcc	caa	gtg	gcc	ctg	gct	gac	aag	gag	ctc	ctg	ccc	tcc	gtc	cgg	697
His	Ser	Gln	Val	Ala	Leu	Ala	Asp	Lys	Glu	Leu	Leu	Pro	Ser	Val	Arg	
174					179					184					189	
cag	gaa	gtg	aag	gag	atc	ctc	ctc	cgg	aag	ggc	gtg	cag	ctg	ctg	ctg	745
Gln	Glu	Val	Lys	Glu	Ile	Leu	Leu	Arg	Lys	Gly	Val	Gln	Leu	Leu	Leu	
190					195					200					205	
agt	gag	cgg	gtg	agc	aat	ctg	gag	gag	ctg	cct	ctc	aat	gag	tat	cga	793
Ser	Glu	Arg	Val	Ser	Asn	Leu	Glu	Glu	Leu	Pro	Leu	Asn	Glu	Tyr	Arg	
206					211					216					221	
gag	tac	atc	aaa	gtg	cag	acg	gac	aaa	ggc	aca	gag	gtg	gcc	acc	aac	841
Glu	Tyr	Ile	Lys	Val	Gln	Thr	Asp	Lys	Gly	Thr	Glu	Val	Ala	Thr	Asn	
222					227					232					237	
ctg	gtg	att	ctc	tgc	acc	ggc	atc	aag	atc	aac	agc	tcc	gcc	tac	cgc	889
Leu	Val	Ile	Leu	Cys	Thr	Gly	Ile	Lys	Ile	Asn	Ser	Ser	Ala	Tyr	Arg	
238					243					248					253	
aaa	gca	ttt	gag	agc	aga	cta	gcc	agc	agt	ggt	gct	ctg	aga	gtg	aac	937
Lys	Ala	Phe	Glu	Ser	Arg	Leu	Ala	Ser	Ser	Gly	Ala	Leu	Arg	Val	Asn	
254					259					264					269	
gag	cac	ctc	cag	gtg	gag	ggc	cac	agc	aac	gtc	tac	gcc	att	ggt	gac	985
Glu	His	Leu	Gln	Val	Glu	Gly	His	Ser	Asn	Val	Tyr	Ala	Ile	Gly	Asp	

270	275	280	285	
tgt gcc gac gtg agg acg ccc aag atg gcc tat ctt gcc ggc ctc cac				1033
Cys Ala Asp Val Arg Thr Pro Lys Met Ala Tyr Leu Ala Gly Leu His				
286	291	296	301	
gcc aac atc gcc gtg gcc aac atc gtc aac tct gtg aag cag cgg cct				1081
Ala Asn Ile Ala Val Ala Asn Ile Val Asn Ser Val Lys Gln Arg Pro				
302	307	312	317	
ctc cag gcc tac aag ccg ggt gca ctg acg ttc ctc ctg tcc atg ggg				1129
Leu Gln Ala Tyr Lys Pro Gly Ala Leu Thr Phe Leu Leu Ser Met Gly				
318	323	328	333	
aga aat gac ggt gtg ggc caa atc agt ggc ttc tat gtg ggc cgg ctc				1177
Arg Asn Asp Gly Val Gly Gln Ile Ser Gly Phe Tyr Val Gly Arg Leu				
334	339	344	349	
atg gtt cgg ctg acc aag agc cgg gac ctg ttc gtc tct acg agc tgg				1225
Met Val Arg Leu Thr Lys Ser Arg Asp Leu Phe Val Ser Thr Ser Trp				
350	355	360	365	
aaa acc atg agg cag tct cca cct tga tggag aggccaggcg ggagaactac				1277
Lys Thr Met Arg Gln Ser Pro Pro *				
366	371			
cgcagcaggt gggcgtacgg actgcttggc gcatggcacc cgcttgcaa gtgctagaac				1337
taatgctatt cttctggaat aagatgccaa tgatgtggtg gctagaaatg caacttgat				1397
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<220>
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cccagggccca gccacgattt gaacgctctg ccttgacgt cttctggacc gaggagccca	180
aagccctacc ctcaccattc accagggtcct gtgggaagag cagcgtggag gtgggctgag	240
gttagaaggt gcagagcgtg gaagaagatt gtgagctgag tattggacat ctgttcttga	300
atagtccctg ggctgccaat aggaaaggaa gttctccagg gttacagttc ttatccgcat	360

gaatacac atg gct ctg tta cga aaa att aat cag gtg ctg ctg ttc ctt	410
Met Ala Leu Leu Arg Lys Ile Asn Gln Val Leu Leu Phe Leu	
1 5 10	
ctg atc gtg acc ctc tgt gtg att ctg tat aaa aaa gtt cat aag ggg	458
Leu Ile Val Thr Leu Cys Val Ile Leu Tyr Lys Lys Val His Lys Gly	
15 20 25 30	
act gtg ccc aag aat gac gca gat gat gaa tcc gag act cct gaa gaa	506
Thr Val Pro Lys Asn Asp Ala Asp Asp Glu Ser Glu Thr Pro Glu Glu	
31 36 41 46	
ctg gaa gaa gag att cct gtg gtg att tgt gct gca gca ggg agg atg	554
Leu Glu Glu Glu Ile Pro Val Val Ile Cys Ala Ala Ala Gly Arg Met	
47 52 57 62	
ggg gcc act atg gct gcc atc aat agc atc tac agc aac act gac gcc	602
Gly Ala Thr Met Ala Ala Ile Asn Ser Ile Tyr Ser Asn Thr Asp Ala	
63 68 73 78	
aac atc ttg ttc tat gta gtg gga ctc cgg aat act ctg act cga ata	650
Asn Ile Leu Phe Tyr Val Val Gly Leu Arg Asn Thr Leu Thr Arg Ile	
79 84 89 94	
cga aaa tgg att gaa cat tcc aaa ctg aga gaa ata aac ttt aaa atc	698
Arg Lys Trp Ile Glu His Ser Lys Leu Arg Glu Ile Asn Phe Lys Ile	
95 100 105 110	
gtg gaa ttc aac ccg atg gtc ctc aaa ggg aag atc aga cca gac tca	746
Val Glu Phe Asn Pro Met Val Leu Lys Gly Lys Ile Arg Pro Asp Ser	
111 116 121 126	
tcg agg cct gaa ttg ctc cag cct ctg aac ttt gtt cga ttt tat ctc	794
Ser Arg Pro Glu Leu Leu Gln Pro Leu Asn Phe Val Arg Phe Tyr Leu	
127 132 137 142	
cct cta ctt atc cac caa cac gag aaa gtc atc tat ttg gac gat gat	842
Pro Leu Leu Ile His Gln His Glu Lys Val Ile Tyr Leu Asp Asp Asp	
143 148 153 158	
gta att gta caa ggt gat atc caa gaa ctg tat gac acc acc ttg gcc	890
Val Ile Val Gln Gly Asp Ile Gln Glu Leu Tyr Asp Thr Thr Leu Ala	
159 164 169 174	
ctg ggc cac gcg gcg gct ttc tca gat gac tgc gat ttg ccc tct gct	938
Leu Gly His Ala Ala Ala Phe Ser Asp Asp Cys Asp Leu Pro Ser Ala	
175 180 185 190	
cag gac ata aac aga ctc gtg gga ctt cag aac aca tat atg ggc tat	986
Gln Asp Ile Asn Arg Leu Val Gly Leu Gln Asn Thr Tyr Met Gly Tyr	
191 196 201 206	
ctg gac tac cgg aag aag gcc atc aag gac ctt ggc atc agc ccc agc	1034
Leu Asp Tyr Arg Lys Lys Ala Ile Lys Asp Leu Gly Ile Ser Pro Ser	
207 212 217 222	
acc tgc tct ttc aat cct ggt gtg att gtt gcc aac atg aca gaa tgg	1082

Thr Cys Ser Phe Asn Pro Gly Val Ile Val Ala Asn Met Thr Glu Trp	
223 228 233 238	
aag cac cag cgc atc acc aag caa ttg gag aaa tgg atg caa aag aat	1130
Lys His Gln Arg Ile Thr Lys Gln Leu Glu Lys Trp Met Gln Lys Asn	
239 244 249 254	
gtg gag gaa aac ctc tat agc agc tcc ctg gga gga ggg gtg gcc acc	1178
Val Glu Glu Asn Leu Tyr Ser Ser Ser Leu Gly Gly Gly Val Ala Thr	
255 260 265 270	
tcc cca atg ctg att gtg ttt cat ggg aaa tat tcc aca att aac ccc	1226
Ser Pro Met Leu Ile Val Phe His Gly Lys Tyr Ser Thr Ile Asn Pro	
271 276 281 286	
ctg tgg cac ata agg cac ctg ggc tgg aat cca gat gcc aga tat tcg	1274
Leu Trp His Ile Arg His Leu Gly Trp Asn Pro Asp Ala Arg Tyr Ser	
287 292 297 302	
gag cat ttt ctg cag gaa gct aaa tta ctc cac tgg aat gga aga cat	1322
Glu His Phe Leu Gln Glu Ala Lys Leu Leu His Trp Asn Gly Arg His	
303 308 313 318	
aaa cct tgg gac ttc cct agt gtt cac aac gac tta tgg gaa agc tgg	1370
Lys Pro Trp Asp Phe Pro Ser Val His Asn Asp Leu Trp Glu Ser Trp	
319 324 329 334	
ttt gtt cct gac cct gca ggg ata ttt aaa ctc aat cac cat agc tga	1418
Phe Val Pro Asp Pro Ala Gly Ile Phe Lys Leu Asn His His Ser *	
335 340 345 350	
tataactcta cccttaaaat attccctgta tagaaatgtg gaattgtccc tttgtagcca	1478
actataacat tgttctttat gaatattacc tttgatacat atgatccaca atataaaaaac	1538
caaaaactac tgtgtgcaaa ttaaaaaaaaaaaaa	1572

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aagcgaatga ttaaaaaataa gtgttgggat tatattttct ttggatttct cttttctatt	180
taaagattgc cctatcagaa tcccatcttc atttttttgt tctttctgac ataggttttc	240

aagggacatg agtgacccga ggatggcggg cggcgcgcg	ggctgcgggg ctccagggcc	300
gccccgcccc caggtgctat gctgtggggc ccgctcagag	cccacccacc tttgggttcc	360
tgttggacat cgatggagt cttgtgcggg gccacagagt	gatccctgct gctctgaaag	420
ccttccgaag gctggtgaac tcccaggggc agctgcgggt	gcccgtgggt tttgttacia	480
atgctgggaa catcttacia cacagcaaag cccaggagct	gtcagccctg ctgggggtgcg	540
aggtggatgc agaccaagtt atcctctctc acagcccc	atg aag ctc ttc tcc Met Lys Leu Phe Ser	593
	1	
gag tac cat gag aag cgg atg ctg gtg tct gga	cag ggg ccc gtg atg	641
Glu Tyr His Glu Lys Arg Met Leu Val Ser Gly	Gln Gly Pro Val Met	
6 11 16 21		
gaa aat gcc cag gga ctg ggc ttc cga aat gtc	gtc acc gtg gat gag	689
Glu Asn Ala Gln Gly Leu Gly Phe Arg Asn Val	Val Thr Val Asp Glu	
22 27 32 37		
ctg cgg atg gcc ttt cct ctg ctt gac atg gtg	gac ctg gag cgg cgg	737
Leu Arg Met Ala Phe Pro Leu Leu Asp Met Val	Asp Leu Glu Arg Arg	
38 43 48 53		
cta aag acc acg ccc ctc ccg agg aat gac ttc	ccc cgc att gaa ggg	785
Leu Lys Thr Thr Pro Leu Pro Arg Asn Asp Phe	Pro Arg Ile Glu Gly	
54 59 64 69		
gtg ctc ctc cta ggg gag ccg gtc cgc tgg gag	acc agc ctg cag ctg	833
Val Leu Leu Leu Gly Glu Pro Val Arg Trp Glu	Thr Ser Leu Gln Leu	
70 75 80 85		
atc atg gat gtc ctc ctc agc aat ggg agc cct	ggg gct ggc ctg gca	881
Ile Met Asp Val Leu Leu Ser Asn Gly Ser Pro	Gly Ala Gly Leu Ala	
86 91 96 101		
aca ccc ccc tac ccc cac ctc ccc gtc cta gcc	agc aac atg gat ctc	929
Thr Pro Pro Tyr Pro His Leu Pro Val Leu Ala	Ser Asn Met Asp Leu	
102 107 112 117		
ctg tgg atg gct gaa gcc aag atg ccc agg ttt	gga cat ggc acc ttt	977
Leu Trp Met Ala Glu Ala Lys Met Pro Arg Phe	Gly His Gly Thr Phe	
118 123 128 133		
ctg ctg tgc ctg gaa acc att tac cag aaa gtg	acg ggc aag gag ctg	1025
Leu Leu Cys Leu Glu Thr Ile Tyr Gln Lys Val	Thr Gly Lys Glu Leu	
134 139 144 149		
aga tac gag ggc ctg atg ggc aaa ccc agc atc	ctc act tac cag tat	1073
Arg Tyr Glu Gly Leu Met Gly Lys Pro Ser Ile	Leu Thr Tyr Gln Tyr	
150 155 160 165		
gcc gag gac ctg atc agg cga cag gcg gag agg	cgg ggc tgg gcc gcc	1121
Ala Glu Asp Leu Ile Arg Arg Gln Ala Glu Arg	Arg Gly Trp Ala Ala	

166	171	176	181	
ccc atc cgg aag ctc tat gct gtg ggt gat aac cct atg tct gac gta				1169
Pro Ile Arg Lys Leu Tyr Ala Val Gly Asp Asn Pro Met Ser Asp Val				
182	187	192	197	
tac ggc gcc aac ctg ttc cac cag tac ctg cag aag gca acg cat gat				1217
Tyr Gly Ala Asn Leu Phe His Gln Tyr Leu Gln Lys Ala Thr His Asp				
198	203	208	213	
ggg gcg cca gaa cta ggg gcc ggg ggc aca cgg cag caa cag ccc tca				1265
Gly Ala Pro Glu Leu Gly Ala Gly Gly Thr Arg Gln Gln Gln Pro Ser				
214	219	224	229	
gca agc cag agc tgc atc tcc atc ctg gtg tgt aca ggc gtc tac aat				1313
Ala Ser Gln Ser Cys Ile Ser Ile Leu Val Cys Thr Gly Val Tyr Asn				
230	235	240	245	
ccc agg aac cca cag tcc acg gag cct gtc ctt gga gga ggg gag cct				1361
Pro Arg Asn Pro Gln Ser Thr Glu Pro Val Leu Gly Gly Gly Glu Pro				
246	251	256	261	
cca ttc cac ggg cac cga gac tta tgc ttc agt cca ggg ctc atg gag				1409
Pro Phe His Gly His Arg Asp Leu Cys Phe Ser Pro Gly Leu Met Glu				
262	267	272	277	
gcc tcc cac gtg gtg aat gac gtg aat gag gct gtg cag ctg gtc ttc				1457
Ala Ser His Val Val Asn Asp Val Asn Glu Ala Val Gln Leu Val Phe				
278	283	288	293	
cgc aag gag ggc tgg gct ttg gag tga gggca gtgcggtgga ggtgaggggg				1509
Arg Lys Glu Gly Trp Ala Leu Glu *				
294	299			
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acttgaaga agacagtgc tctttttccc tgetgggtag cattttgtat ggaacggttg				1689
gaattttctg ggcccagttc ccacgtgcct ttcgtggcag tctaacctca ggccattctc				1749
ttccctgtg tgccctcagtg tccttctcat ttcagtaggg acttctgaaa tgggggaggc				1809
agtgtggaat actgtggatg tctgtgcaga gcctttgccg gcaactgaagg catgcagcct				1869
gtcggcagag tgtcttaaca ccagatgcta ctttttactg tattgtagtt tattgcccgg				1929
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<220>
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<400> 888

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Met Cys Gly Arg Thr Ser Cys	
1 5	
cac tta cct aga gat gtt ctc acg aga gct tgc gcc tac cag gat cgg	160
His Leu Pro Arg Asp Val Leu Thr Arg Ala Cys Ala Tyr Gln Asp Arg	
8 13 18 23	
cgg ggc cag cag cgg ctc ccg gag tgg agg gac cct gat aag tac tgc	208
Arg Gly Gln Gln Arg Leu Pro Glu Trp Arg Asp Pro Asp Lys Tyr Cys	
24 29 34 39	
ccc tct tac aac aag agt cct caa tcc aac agc cca gtg ctt ctg tct	256
Pro Ser Tyr Asn Lys Ser Pro Gln Ser Asn Ser Pro Val Leu Leu Ser	
40 45 50 55	
cga ctg cac ttt gag aag gat gca gac tca tct gag cgt atc att gct	304
Arg Leu His Phe Glu Lys Asp Ala Asp Ser Ser Glu Arg Ile Ile Ala	
56 61 66 71	
ccc atg cgc tgg ggc ttg gtc cct tct tgg ttc aaa gaa agt gat cct	352
Pro Met Arg Trp Gly Leu Val Pro Ser Trp Phe Lys Glu Ser Asp Pro	
72 77 82 87	
tcc aag ctg cag ttc aat act acc aac tgt cgt agt gat acc gta atg	400
Ser Lys Leu Gln Phe Asn Thr Thr Asn Cys Arg Ser Asp Thr Val Met	
88 93 98 103	
gag aaa cgg tca ttt aag gtg cct ctg gga aag gga aga cgc tgt gtc	448
Glu Lys Arg Ser Phe Lys Val Pro Leu Gly Lys Gly Arg Arg Cys Val	
104 109 114 119	
gtt tta gca gat gga ttc tat gag tgg cag cga tgt cag gga aca aac	496
Val Leu Ala Asp Gly Phe Tyr Glu Trp Gln Arg Cys Gln Gly Thr Asn	
120 125 130 135	
cag agg cag cca tac ttc atc tat ttt cct caa atc aag aca gag aag	544
Gln Arg Gln Pro Tyr Phe Ile Tyr Phe Pro Gln Ile Lys Thr Glu Lys	
136 141 146 151	
tca ggt agc att ggt gct gca gat agt cct gag aac tgg gag aaa gtc	592
Ser Gly Ser Ile Gly Ala Ala Asp Ser Pro Glu Asn Trp Glu Lys Val	
152 157 162 167	
tgg gac aac tgg agg ctg ctg aca atg gcc ggg atc ttt gac tgc tgg	640
Trp Asp Asn Trp Arg Leu Leu Thr Met Ala Gly Ile Phe Asp Cys Trp	
168 173 178 183	
gag ccc cca gag gga gga gat gtc ctg tat tcc tat acc atc atc aca	688

Glu Pro Pro Glu Gly Gly Asp Val Leu Tyr Ser Tyr Thr Ile Ile Thr	
184 189 194 199	
gtg gat tcc tgc aaa ggc ttg agt gac atc cac cac agg atg cct gcc	736
Val Asp Ser Cys Lys Gly Leu Ser Asp Ile His His Arg Met Pro Ala	
200 205 210 215	
ata tta gat gga gag gag gca gtt tct aaa tgg ctt gac ttt ggt gaa	784
Ile Leu Asp Gly Glu Glu Ala Val Ser Lys Trp Leu Asp Phe Gly Glu	
216 221 226 231	
gtc tca act cag gaa gct ctg aaa tta atc cac cca aca gag aac atc	832
Val Ser Thr Gln Glu Ala Leu Lys Leu Ile His Pro Thr Glu Asn Ile	
232 237 242 247	
acc ttc cat gca gtc tct tct gtg gtg aac aac tcg cga aac aac act	880
Thr Phe His Ala Val Ser Ser Val Val Asn Asn Ser Arg Asn Asn Thr	
248 253 258 263	
cct gag tgt ctg gct cct gtc gac ttg gtg gtc aaa aag gag ctc agg	928
Pro Glu Cys Leu Ala Pro Val Asp Leu Val Val Lys Lys Glu Leu Arg	
264 269 274 279	
gca agt ggc agt agc cag agg atg ttg cag tgg ttg gcc aca aag tca	976
Ala Ser Gly Ser Ser Gln Arg Met Leu Gln Trp Leu Ala Thr Lys Ser	
280 285 290 295	
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Pro Lys Lys Glu Asp Ser Lys Thr Pro Gln Lys Glu Glu Ser Asp Val	
296 301 306 311	
ccc cag tgg tcc agt cag ttc ctg cag aag agt cca ctc ccc acc aag	1072
Pro Gln Trp Ser Ser Gln Phe Leu Gln Lys Ser Pro Leu Pro Thr Lys	
312 317 322 327	
aga ggc act gca gga ctc cta gag caa tgg ctg aag cgg gag aag gag	1120
Arg Gly Thr Ala Gly Leu Leu Glu Gln Trp Leu Lys Arg Glu Lys Glu	
328 333 338 343	
gag gaa cct gtg gcc aag cgt cct tac agc cag tga caca ggactttcag	1170
Glu Glu Pro Val Ala Lys Arg Pro Tyr Ser Gln *	
344 349 354	
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gtctttttttg ccatgagtag gagcccctag tggggctggt ggacagcttt ggaagaggtg	1350
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tggcagggct ggtggagtct tccctcaaag catgccttac ccagctggga agtctctgcc	1470
ctgatctggt actccttgta gtaagctggt ttctgctcag ccactgggct ctttcacttt	1530
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<211> 1948
<212> DNA
<213> Homo sapiens

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<220>
<221> CDS
<222> (39)..(1127)

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<400> 889

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              1

tgc ctg gag ggc ggg agg gag gcg gcg gag gaa gag ggc gag cct gag      101
Cys Leu Glu Gly Gly Arg Glu Ala Ala Glu Glu Glu Gly Glu Pro Glu
  6              11              16              21

gtg aaa aag cgg cga ctt ctg tgt gtg gag ttt gcc tcg gtc gca agc      149
Val Lys Lys Arg Arg Leu Leu Cys Val Glu Phe Ala Ser Val Ala Ser
  22              27              32              37

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tgc gat gcc gca gtg gct cag tgc ttc ctg gcc gag aac gac tgg gag	197
Cys Asp Ala Ala Val Ala Gln Cys Phe Leu Ala Glu Asn Asp Trp Glu	
38 43 48 53	
atg gaa agg gct ctg aac tcc tac ttc gag cct ccg gtg gag gag agc	245
Met Glu Arg Ala Leu Asn Ser Tyr Phe Glu Pro Pro Val Glu Glu Ser	
54 59 64 69	
gcc ttg gaa cgc cga cct gaa acc atc tct gag ccc aag acc tat gtt	293
Ala Leu Glu Arg Arg Pro Glu Thr Ile Ser Glu Pro Lys Thr Tyr Val	
70 75 80 85	
gac cta acc aat gaa gaa aca act gat tcc acc act tct aaa atc agc	341
Asp Leu Thr Asn Glu Glu Thr Thr Asp Ser Thr Thr Ser Lys Ile Ser	
86 91 96 101	
cca tct gaa gat act cag caa gaa aat ggc agc atg ttc tct ctc att	389
Pro Ser Glu Asp Thr Gln Gln Glu Asn Gly Ser Met Phe Ser Leu Ile	
102 107 112 117	
acc tgg aat att gat gga tta gat cta aac aat ctg tca gag agg gct	437
Thr Trp Asn Ile Asp Gly Leu Asp Leu Asn Asn Leu Ser Glu Arg Ala	
118 123 128 133	
cga ggg gtg tgt tcc tac tta gct ttg tac agc cca gat gtg ata ttt	485
Arg Gly Val Cys Ser Tyr Leu Ala Leu Tyr Ser Pro Asp Val Ile Phe	
134 139 144 149	
cta cag gaa gtt att ccc cca tat tat agc tac cta aag aag aga tca	533
Leu Gln Glu Val Ile Pro Pro Tyr Tyr Ser Tyr Leu Lys Lys Arg Ser	
150 155 160 165	
agt aat tat gag att att aca ggt cat gaa gaa gga tat ttc aca gct	581
Ser Asn Tyr Glu Ile Ile Thr Gly His Glu Glu Gly Tyr Phe Thr Ala	
166 171 176 181	
ata atg ttg aag aaa tca aga gtg aaa tta aaa agc caa gag att att	629
Ile Met Leu Lys Lys Ser Arg Val Lys Leu Lys Ser Gln Glu Ile Ile	
182 187 192 197	
cct ttt cca agt acc aaa atg atg aga aac ctt tta tgt gtg cat gtg	677
Pro Phe Pro Ser Thr Lys Met Met Arg Asn Leu Leu Cys Val His Val	
198 203 208 213	
aat gtg tca gga aat gag ctt tgc ctt atg aca tcc cat ttg gag agc	725
Asn Val Ser Gly Asn Glu Leu Cys Leu Met Thr Ser His Leu Glu Ser	
214 219 224 229	
acc aga ggg cat gct gcg gaa cga atg aat cag tta aaa atg gtt tta	773
Thr Arg Gly His Ala Ala Glu Arg Met Asn Gln Leu Lys Met Val Leu	
230 235 240 245	
aag aaa atg caa gag gct cca gag tca gct aca gtt ata ttt gca gga	821
Lys Lys Met Gln Glu Ala Pro Glu Ser Ala Thr Val Ile Phe Ala Gly	
246 251 256 261	
gat aca aat cta agg gat cga gag gtt acc aga tgt ggt ggt tta ccc	869

Asp Thr Asn Leu Arg	Asp Arg Glu Val Thr Arg Cys Gly Gly Leu Pro	
262	267 272 277	
aac aac att gtg gat gtc tgg gag ttt ttg ggc aaa cct aaa cat tgc		917
Asn Asn Ile Val Asp Val Trp Glu Phe Leu Gly Lys Pro Lys His Cys		
278	283 288 293	
cag tat aca tgg gat aca caa atg aac tct aat ctt gga ata act gct		965
Gln Tyr Thr Trp Asp Thr Gln Met Asn Ser Asn Leu Gly Ile Thr Ala		
294	299 304 309	
gct tgt aaa ctt cgt ttt gat cga ata ttt ttc aga gca gca gca gaa		1013
Ala Cys Lys Leu Arg Phe Asp Arg Ile Phe Phe Arg Ala Ala Ala Glu		
310	315 320 325	
gag gga cac att att ccc cga agt ttg gac ctt ctt gga tta gaa aaa		1061
Glu Gly His Ile Ile Pro Arg Ser Leu Asp Leu Leu Gly Leu Glu Lys		
326	331 336 341	
ctg gac tgt ggt aga ttt cct agt gat cac tgg ggt ctt ctg tgc aac		1109
Leu Asp Cys Gly Arg Phe Pro Ser Asp His Trp Gly Leu Leu Cys Asn		
342	347 352 357	
tta gat ata ata ttg taa aatgct tttcaagtgt gggttttgcc ctgattgttg		1163
Leu Asp Ile Ile Leu *		
358	363	
caaatacaat ttccaccttc tggaaaggta ggtttgctgt ggaggaaata atgtactaga		1223
tcattgtcac agaaaaacca actatgattt atgggtgtgt tttcagaatt caacattaaa		1283
gattaatgtt tatttaaacg aacacattcc tgcattcagg atgtgaggcc atttaataaa		1343
aagggcacaa agcctgtcag agttttcaac ggtgcttata gctgccagct ggattccaaa		1403
caggtacccc attgtctctg agctaattgtt tatatttttc cattcaggca ccgaaatagt		1463
taatatttaa aataagtctt caaaagaaaa cataagagat tattgagttc ttgggactgg		1523
atcctttatt tcataagttc agatcatctt aaatgaaaat gccatgatta tctgcagtta		1583
agtagatgac agctattcta catcagactt gatttttgtc agctaattac ataattggta		1643
agctataatt gaaaccttat ggcttaaaat tccttaactc ctttttgatt catgtttgta		1703
gtcatgttgt caacagaggc aaagttaagc ttgatgatgg ttaaaatcgg tttgatagca		1763
ccatgggaca tttttctaac aaaaataaat gcatgaagag acatagcctt ttagttttgc		1823
taattgtgaa atggaaatgc tttacaggaa gtaaatacaa attactttta agtgtgcttt		1883
aaagaaaaat attttcccca caagagaaat ttaaataaag aattttatatt gttaaaaaaa		1943
aaaaa	/	1948

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 <222> (1)..(297)

<400> 890

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acc acc atc tgc tcc tct gac aaa tcc tgc cgc tgt gga gtc tgc ctg 96
 Thr Thr Ile Cys Ser Ser Asp Lys Ser Cys Arg Cys Gly Val Cys Leu
 17 22 27 32

ccc agc acc tgc cca cac aca gtt tgg tta ctg gag ccc acc tgc tgt 144
 Pro Ser Thr Cys Pro His Thr Val Trp Leu Leu Glu Pro Thr Cys Cys
 33 38 43 48

gac aac tgt ccc cca ccc tgc cac att cct cag ccc tgc gtg ccc acc 192
 Asp Asn Cys Pro Pro Pro Cys His Ile Pro Gln Pro Cys Val Pro Thr
 49 54 59 64

tgc ttc ctg ctc aac tcc tgc cag cca act cca ggc ctg gag acc ctc 240
 Cys Phe Leu Leu Asn Ser Cys Gln Pro Thr Pro Gly Leu Glu Thr Leu
 65 70 75 80

aac ctc acc acc ttc act cag ccc tgc tgt gag ccc tgc ctc cca aga 288
 Asn Leu Thr Thr Phe Thr Gln Pro Cys Cys Glu Pro Cys Leu Pro Arg
 81 86 91 96

ggc tgc taa tggatgg ctactttgct cagtgcctga gattgaaaaa gtcaacatag 344
 Gly Cys *
 97

aagcttttagc attcacctat ctcaagtacct acaactaatg tactctgctt tagaaattgg 404

aacaaggatg gag 417

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 <222> (153)..(1436)

<400> 891

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gtattgctaa aggaggagtt gaccacacca aa atg agt cta cat ggt gct agt	173
Met Ser Leu His Gly Ala Ser	
1 5	
ggg gga cat gag aga tca aga gat aga cga agg tca agt gac aga tca	221
Gly Gly His Glu Arg Ser Arg Asp Arg Arg Arg Ser Ser Asp Arg Ser	
8 13 18 23	
cga gat tca tct cat gaa aga acg gag tct cag ctc act cct tgt att	269
Arg Asp Ser Ser His Glu Arg Thr Glu Ser Gln Leu Thr Pro Cys Ile	
24 29 34 39	
aga aat gtg act tct cca aca cga cag cac cat gtt gaa cga gaa aaa	317
Arg Asn Val Thr Ser Pro Thr Arg Gln His His Val Glu Arg Glu Lys	
40 45 50 55	
gat cac agt tcc tct cgt cca agc agt ccg cgt cct caa aaa gca tcc	365
Asp His Ser Ser Ser Arg Pro Ser Ser Pro Arg Pro Gln Lys Ala Ser	
56 61 66 71	
cca aat ggt tcc att agc agt gct ggg aac agc agc aga aac agt agt	413
Pro Asn Gly Ser Ile Ser Ser Ala Gly Asn Ser Ser Arg Asn Ser Ser	
72 77 82 87	
cag tca agt tca gat ggt agc tgt aag aca gct ggg gag atg gtg ttt	461
Gln Ser Ser Ser Asp Gly Ser Cys Lys Thr Ala Gly Glu Met Val Phe	
88 93 98 103	
gta tat gaa aat gca aaa gaa gga gct cgg aat ata aga acg tca gaa	509
Val Tyr Glu Asn Ala Lys Glu Gly Ala Arg Asn Ile Arg Thr Ser Glu	
104 109 114 119	
cga gtg aca cta ata gtg gat aac act aga ttt gtt gta gac cca tcc	557
Arg Val Thr Leu Ile Val Asp Asn Thr Arg Phe Val Val Asp Pro Ser	
120 125 130 135	
att ttt act gca cag cca aat aca atg ttg ggc agg atg ttt gga tct	605
Ile Phe Thr Ala Gln Pro Asn Thr Met Leu Gly Arg Met Phe Gly Ser	
136 141 146 151	
ggc cga gaa cat aac ttt aca cga ccc aat gag aaa gga gag tat gag	653
Gly Arg Glu His Asn Phe Thr Arg Pro Asn Glu Lys Gly Glu Tyr Glu	
152 157 162 167	
gtg gca gag gga att ggt tcc act gtg ttt cga gcg att ctg gat tac	701
Val Ala Glu Gly Ile Gly Ser Thr Val Phe Arg Ala Ile Leu Asp Tyr	
168 173 178 183	
tat aaa aca gga ata atc cgt tgt cct gat ggc ata tct att cct gaa	749
Tyr Lys Thr Gly Ile Ile Arg Cys Pro Asp Gly Ile Ser Ile Pro Glu	
184 189 194 199	
ctg aga gaa gca tgt gac tat ctt tgt atc tct ttt gaa tat agc act	797
Leu Arg Glu Ala Cys Asp Tyr Leu Cys Ile Ser Phe Glu Tyr Ser Thr	

att aaa tgt aga gat ctc agt gcc cta atg cat gag tta tca aat gat	845
Ile Lys Cys Arg Asp Leu Ser Ala Leu Met His Glu Leu Ser Asn Asp	
216 221 226 231	
ggt gct cgt aga caa ttt gaa ttt tat ctg gaa gaa atg atc ctc cct	893
Gly Ala Arg Arg Gln Phe Glu Phe Tyr Leu Glu Glu Met Ile Leu Pro	
232 237 242 247	
ctc atg gta gct agt gcc cag agt ggg gaa cgg gaa tgt cat ata gtg	941
Leu Met Val Ala Ser Ala Gln Ser Gly Glu Arg Glu Cys His Ile Val	
248 253 258 263	
gtg ctt aca gat gat gat gtg gtt gat tgg gat gaa gaa tat cca cca	989
Val Leu Thr Asp Asp Asp Val Val Asp Trp Asp Glu Glu Tyr Pro Pro	
264 269 274 279	
cag atg gga gaa gaa tat tca caa att att tat agc aca aaa tta tat	1037
Gln Met Gly Glu Glu Tyr Ser Gln Ile Ile Tyr Ser Thr Lys Leu Tyr	
280 285 290 295	
aga ttt ttc aag tat att gaa aac aga gat gtg gcc aag tca gtt ttg	1085
Arg Phe Phe Lys Tyr Ile Glu Asn Arg Asp Val Ala Lys Ser Val Leu	
296 301 306 311	
aag gag agg ggt ctt aag aag att aga ttg gga ata gaa ggt tat cct	1133
Lys Glu Arg Gly Leu Lys Lys Ile Arg Leu Gly Ile Glu Gly Tyr Pro	
312 317 322 327	
acc tac aaa gaa aaa gta aag aaa agg cct gga ggc cgc cca gaa gtg	1181
Thr Tyr Lys Glu Lys Val Lys Lys Arg Pro Gly Gly Arg Pro Glu Val	
328 333 338 343	
atc tac aac tat gtc caa aga ccc ttt att cga atg tcc tgg gag aag	1229
Ile Tyr Asn Tyr Val Gln Arg Pro Phe Ile Arg Met Ser Trp Glu Lys	
344 349 354 359	
gaa gaa gga aag agt cgg cat gta gac ttt cag tgt gta aag agt aaa	1277
Glu Glu Gly Lys Ser Arg His Val Asp Phe Gln Cys Val Lys Ser Lys	
360 365 370 375	
tct atc acc aat ctt gca gca gct gca gca gac att ccc cag gac cag	1325
Ser Ile Thr Asn Leu Ala Ala Ala Ala Ala Asp Ile Pro Gln Asp Gln	
376 381 386 391	
ctg gta gtc atg cat cca act cca caa gtg gat gag ctg gat att ctc	1373
Leu Val Val Met His Pro Thr Pro Gln Val Asp Glu Leu Asp Ile Leu	
392 397 402 407	
cct atc cat ccc cct tct ggc aac agt gac ctc gat cct gat gca cag	1421
Pro Ile His Pro Pro Ser Gly Asn Ser Asp Leu Asp Pro Asp Ala Gln	
408 413 418 423	
aat cca atg ctg tga tgctgatctt ccttgaaacc atagcatgct actcttcaca	1476
Asn Pro Met Leu *	
424	

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gtgacgttgt actctcctca ttctgcactg caaggccact cttcttcatt gtgagatgca 1536
cataacaatg tttaggatat tgcagtgtag gcttttttaa agaccaaagg tagctgaatg 1596
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<210> 892
<211> 1265
<212> DNA
<213> Homo sapiens

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<220>
<221> CDS
<222> (193)..(1134)

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ctcagaggac cagcttcttc cctgctgtct cctgagccca gtccctcttg gccatcacat 180
tccccttgcc ct      atg gcg gcc ctc aca gac ctc tca ttt atg tat cgc 228
                   Met Ala Ala Leu Thr Asp Leu Ser Phe Met Tyr Arg
                   1             5             10

tgg ttc aag aac tgc aat ctg gtt ggc aac ctc tca gag aag tac gtc 276
Trp Phe Lys Asn Cys Asn Leu Val Gly Asn Leu Ser Glu Lys Tyr Val
13             18             23             28

ttc atc aca ggc tgt gac tct ggc ttc ggg aac ctg ctg gcc aaa cag 324

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Phe Ile Thr Gly Cys Asp Ser Gly Phe Gly Asn Leu Leu Ala Lys Gln	
29 34 39 44	
ctg gtt gat cgg ggc atg cag gtg ctg gct gct tgc ttc act gag gag	372
Leu Val Asp Arg Gly Met Gln Val Leu Ala Ala Cys Phe Thr Glu Glu	
45 50 55 60	
gga tcc cag aaa ctt cag cgg gat acc tcc tat cgg ctg cag acc acc	420
Gly Ser Gln Lys Leu Gln Arg Asp Thr Ser Tyr Arg Leu Gln Thr Thr	
61 66 71 76	
cta ctg gat gtc acc aag agc gaa agc atc aag gcg gcg gcc cag tgg	468
Leu Leu Asp Val Thr Lys Ser Glu Ser Ile Lys Ala Ala Ala Gln Trp	
77 82 87 92	
gtg agg gac aaa gtg ggc gaa caa ggc ctc tgg gcc ctg gtg aac aat	516
Val Arg Asp Lys Val Gly Glu Gln Gly Leu Trp Ala Leu Val Asn Asn	
93 98 103 108	
gct ggt gtg ggc ctg ccc agt ggt ccc aac gaa tgg ctg acc aag gat	564
Ala Gly Val Gly Leu Pro Ser Gly Pro Asn Glu Trp Leu Thr Lys Asp	
109 114 119 124	
gac ttt gtg aag gtg att aat gtg aac ctg gtg gga ctg atc gaa gtg	612
Asp Phe Val Lys Val Ile Asn Val Asn Leu Val Gly Leu Ile Glu Val	
125 130 135 140	
acc ctt cac atg ctg ccc atg gtc aag aga gcc cgg ggc agg gtt gtc	660
Thr Leu His Met Leu Pro Met Val Lys Arg Ala Arg Gly Arg Val Val	
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aac atg tcc agc tct ggt ggt cgt gtg gct gtc att ggt ggt ggc tac	708
Asn Met Ser Ser Ser Gly Gly Arg Val Ala Val Ile Gly Gly Gly Tyr	
157 162 167 172	
tgc gtc tcc aag ttt ggc gtt gag gcc ttc tct gac agc ata agg cgt	756
Cys Val Ser Lys Phe Gly Val Glu Ala Phe Ser Asp Ser Ile Arg Arg	
173 178 183 188	
gag ctc tac tac ttt ggg gtg aaa gtc tgc atc att gag cca ggg aac	804
Glu Leu Tyr Tyr Phe Gly Val Lys Val Cys Ile Ile Glu Pro Gly Asn	
189 194 199 204	
tat cgg aca gcc att ctc ggc aag gag aac ctg gag tca cgc atg cga	852
Tyr Arg Thr Ala Ile Leu Gly Lys Glu Asn Leu Glu Ser Arg Met Arg	
205 210 215 220	
aag ctt tgg gag agg ctg cct cag gag acc cgg gac agc tac gga gag	900
Lys Leu Trp Glu Arg Leu Pro Gln Glu Thr Arg Asp Ser Tyr Gly Glu	
221 226 231 236	
gat tat ttc cgc atc tat act gac aag tta aaa aac ata atg cag gtg	948
Asp Tyr Phe Arg Ile Tyr Thr Asp Lys Leu Lys Asn Ile Met Gln Val	
237 242 247 252	
gca gag ccc aga gtc aga gat gtc atc aac agc atg gag cat gct att	996
Ala Glu Pro Arg Val Arg Asp Val Ile Asn Ser Met Glu His Ala Ile	

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Val Ser Arg Ser Pro Arg Ile Arg Tyr Asn Pro Gly Leu Asp Ala Lys				
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Leu Leu Tyr Ile Pro Leu Ala Lys Leu Pro Thr Pro Val Thr Asp Phe				
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atc cta agc cgg tac ctt cca agg cca gcg gac agt gtc taa actgggg				1141
Ile Leu Ser Arg Tyr Leu Pro Arg Pro Ala Asp Ser Val *				
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Arg Val Val Leu Thr Leu Lys Glu Lys Ile Asp Ile Cys Thr Arg Leu	
17 22 27 32	

gag aag ggc gag agc cgg aag gca ctg atg cag gag tac aat gtg ggc	144
Glu Lys Gly Glu Ser Arg Lys Ala Leu Met Gln Glu Tyr Asn Val Gly	
33 38 43 48	

atg tcc acc ctc tac gac atc agg gcc cac aag gcg cag ctg ctc cgg	192
Met Ser Thr Leu Tyr Asp Ile Arg Ala His Lys Ala Gln Leu Leu Arg	
49 54 59 64	

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Phe Phe Ala Ser Ser Asp Ser Asn Lys Ala Leu Glu Gln Arg Arg Thr	
65 70 75 80	

ctg cac acg ccc aag ctg gag cac ctg gac cgc gtc ctg tac gag tgg	288
Leu His Thr Pro Lys Leu Glu His Leu Asp Arg Val Leu Tyr Glu Trp	
81 86 91 96	

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Phe Leu Gly Lys Arg Ser Glu Gly Val Pro Val Ser Gly Pro Met Leu	
97 102 107 112	
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Ile Glu Lys Ala Lys Asp Phe Tyr Glu Gln Met Gln Leu Thr Glu Pro	
113 118 123 128	
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Cys Val Phe Ser Gly Gly Trp Leu Trp Arg Phe Lys Ala Arg His Gly	
129 134 139 144	
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Ile Lys Lys Leu Asp Ala Ser Ser Glu Lys Gln Ser Ala Asp His Gln	
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gcc gcg gag cag ttc tgt gcg ttt ttc agg agc ttg gct gct gag cac	528
Ala Ala Glu Gln Phe Cys Ala Phe Phe Arg Ser Leu Ala Ala Glu His	
161 166 171 176	
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Gly Leu Ser Ala Glu Gln Val Tyr Asn Ala Asp Glu Thr Gly Leu Phe	
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Trp Arg Cys Leu Pro Asn Pro Thr Pro Glu Gly Gly Ala Val Pro Gly	
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ccc aag cag ggc aag gac cgg ctg acc gtg ctg atg tgt gcc aac gcc	672
Pro Lys Gln Gly Lys Asp Arg Leu Thr Val Leu Met Cys Ala Asn Ala	
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Thr Gly Ser His Arg Leu Lys Pro Leu Ala Ile Gly Lys Cys Ser Gly	
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Pro Arg Ala Phe Lys Gly Ile Gln His Leu Pro Val Ala Tyr Lys Ala	
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Gln Gly Asn Ala Trp Val Asp Lys Glu Ile Phe Ser Asp Trp Phe His	
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His Ile Phe Val Pro Ser Val Arg Glu His Phe Arg Thr Ile Gly Leu	
273 278 283 288	
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Pro Glu Asp Ser Lys Ala Val Leu Leu Leu Asp Ser Ser Arg Ala His	
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Pro Gln Glu Ala Glu Leu Val Ser Ser Asn Val Phe Thr Ile Phe Leu	
305 310 315 320	
cct gcc agc gtg gcc tca ttg gtg cag ccc atg gag cag ggc att cgg	1008

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560

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Met Phe Trp Arg Gln Met	
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Gly Gly His Leu Arg Met Val Glu Ala Asn Ser Arg Gly Val Val Trp	
7 12 17 22	/
ggc atc ggc tat gac cac acg gcc tgg gta tac aca ggc ggc tat gga	1591
Gly Ile Gly Tyr Asp His Thr Ala Trp Val Tyr Thr Gly Gly Tyr Gly	

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Gly Gly Cys Phe Gln Gly Leu Ala Ser Ser Thr Ser Asn Ile Tyr Thr				
39	44	49	54	
cag tca gac gtg aag tgt gtt cac atc tat gag aac cag cgc tgg aac				1687
Gln Ser Asp Val Lys Cys Val His Ile Tyr Glu Asn Gln Arg Trp Asn				
55	60	65	70	
ccc gtc aca ggc tac acc agc agg ggt ctg ccc acg gac cgg tac atg				1735
Pro Val Thr Gly Tyr Thr Ser Arg Gly Leu Pro Thr Asp Arg Tyr Met				
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tgg agc gat gcc tcg ggg ctg cag gag tgc acg aag gct ggc acg aag				1783
Trp Ser Asp Ala Ser Gly Leu Gln Glu Cys Thr Lys Ala Gly Thr Lys				
87	92	97	102	
ccc ccg tcc ctg cag tgg gcc tgg gtt tcc gac tgg ttc gtg gat ttc				1831
Pro Pro Ser Leu Gln Trp Ala Trp Val Ser Asp Trp Phe Val Asp Phe				
103	108	113	118	
agc gtt ccg ggg ggc acg gac cag gag ggg tgg cag tat gcc agc gac				1879
Ser Val Pro Gly Gly Thr Asp Gln Glu Gly Trp Gln Tyr Ala Ser Asp				
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ttc cct gcc tca tac cat ggg tcc aaa acg atg aag gat ttt gtg agg				1927
Phe Pro Ala Ser Tyr His Gly Ser Lys Thr Met Lys Asp Phe Val Arg				
135	140	145	150	
agg agg tgc tgg gcc aga aaa tgc aag ctg gtg acc agt ggg ccc tgg				1975
Arg Arg Cys Trp Ala Arg Lys Cys Lys Leu Val Thr Ser Gly Pro Trp				
151	156	161	166	
ctg gag gtg ccc ccc atc gcc ctc agg gac gtg tcc atc atc ccg gag				2023
Leu Glu Val Pro Pro Ile Ala Leu Arg Asp Val Ser Ile Ile Pro Glu				
167	172	177	182	
agc ccg ggt gcc gag ggg agt ggg cac agc atc gcc ctc tgg gcc gtc				2071
Ser Pro Gly Ala Glu Gly Ser Gly His Ser Ile Ala Leu Trp Ala Val				
183	188	193	198	
agc gac aag ggg gat gtg ctg tgc cgc ctg ggc gtg tcg gag ctc aac				2119
Ser Asp Lys Gly Asp Val Leu Cys Arg Leu Gly Val Ser Glu Leu Asn				
199	204	209	214	
cct gcg ggc tcc tcc tgg ctg cac gtt ggc acc gac cag ccc ttc gcc				2167
Pro Ala Gly Ser Ser Trp Leu His Val Gly Thr Asp Gln Pro Phe Ala				
215	220	225	230	
tcc atc tcc atc ggg gcc tgc tac cag gtg tgg gcc gtg gca agg gac				2215
Ser Ile Ser Ile Gly Ala Cys Tyr Gln Val Trp Ala Val Ala Arg Asp				
231	236	241	246	
ggc tcc gcc ttc tac cgg gga tcc gtg tac ccc tcg cag cca gcc ggt				2263
Gly Ser Ala Phe Tyr Arg Gly Ser Val Tyr Pro Ser Gln Pro Ala Gly				
247	252	257	262	

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Asp Cys Trp Tyr His Ile Pro Ser Pro Pro Arg Gln Arg Leu Lys Gln	
263 268 273 278	
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Val Ser Ala Gly Gln Thr Ser Val Tyr Ala Leu Asp Glu Asn Gly Asn	
279 284 289 294	
ctg tgg tat cgc caa ggg atc acg ccc agc tac ccg cag ggc tcc agc	2407
Leu Trp Tyr Arg Gln Gly Ile Thr Pro Ser Tyr Pro Gln Gly Ser Ser	
295 300 305 310	
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Trp Glu His Val Ser Asn Asn Val Cys Arg Val Ser Val Gly Pro Leu	
311 316 321 326	
gac cag gtc tgg gtg atc gcc aac aaa gtg cag ggc agc cac agc ctg	2503
Asp Gln Val Trp Val Ile Ala Asn Lys Val Gln Gly Ser His Ser Leu	
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Lys Gly His Gly Trp Asp Tyr Gly Ile Gly Gly Gly Trp Asp His Ile	
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Ser Val Arg Ala Asn Ala Thr Arg Ala Pro Arg Ser Ser Ser Gln Glu	
375 380 385 390	
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Gln Glu Pro Ser Ala Pro Pro Glu Ala His Gly Pro Val Cys Cys *	
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Met Arg Gly Cys Gln Leu Leu Gly Leu Arg Ser Ser Trp Pro Gly
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Asp Leu Leu Ser Ala Arg Leu Leu Ser Gln Glu Lys Arg Ala Ala Glu
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Thr His Phe Gly Phe Glu Thr Val Ser Glu Glu Glu Lys Gly Gly Lys
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Val Tyr Gln Val Phe Glu Ser Val Ala Lys Lys Tyr Asp Val Met Asn
48 53 58 63
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Asp Met Met Ser Leu Gly Ile His Arg Val Trp Lys Asp Leu Leu Leu
64 69 74 79
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Trp Lys Met His Pro Leu Pro Gly Thr Gln Leu Leu Asp Val Ala Gly
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<222> (274) .. (702)

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cctctctttc tctctctcct ctgccttccc agtgcataaa gtctctgtcg ctcccgaac 180
ttgttgcaa tgctatttt ttggctttcc cccgcgttct ctaaactaac tatttaaagg 240
tctgcggctg caaatggttt gactaaacgt agg atg gga ctt aag ttg aac ggc 294
          Met Gly Leu Lys Leu Asn Gly
          1                      5

aga tat att tca ctg atc ctc gcg gtg caa ata gcg tat ctg gtg cag 342
Arg Tyr Ile Ser Leu Ile Leu Ala Val Gln Ile Ala Tyr Leu Val Gln
  8              13              18              23

gcc gtg aga gca gcg ggc aag tgc gat gcg gtc ttc aag ggc ttt tcg 390
Ala Val Arg Ala Ala Gly Lys Cys Asp Ala Val Phe Lys Gly Phe Ser
 24              29              34              39

gac tgt ttg ctc aag ctg ggc gac agc atg gcc aac tac ccg cag ggc 438
Asp Cys Leu Leu Lys Leu Gly Asp Ser Met Ala Asn Tyr Pro Gln Gly
 40              45              50 |              55

ctg gac gac aag acg aac atc aag acc gtg tgc aca tac tgg gag gat 486
Leu Asp Asp Lys Thr Asn Ile Lys Thr Val Cys Thr Tyr Trp Glu Asp
 56              61              66              71

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Phe His Ser Cys Thr Val Thr Ala Leu Thr Asp Cys Gln Glu Gly Ala	
72 77 82 87	
aaa gat atg tgg gat aaa ctg aga aaa gaa tcc aaa aac ctc aac atc	582
Lys Asp Met Trp Asp Lys Leu Arg Lys Glu Ser Lys Asn Leu Asn Ile	
88 93 98 103	
caa ggc agc tta ttc gaa ctc tgc ggc agc ggc aac ggg gcg gcg ggg	630
Gln Gly Ser Leu Phe Glu Leu Cys Gly Ser Gly Asn Gly Ala Ala Gly	
104 109 114 119	
tcc ctg ctc ccg gcg ttc ccg gtg ctc ctg gtg tct ctc tcg gca gct	678
Ser Leu Leu Pro Ala Phe Pro Val Leu Leu Val Ser Leu Ser Ala Ala	
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Leu Ala Thr Trp Leu Ser Phe *	
136 141	
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tgtttcctac cccaacctgc tttcttgacc cagttctcag ggaacctgaa gggacacagg	1752
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124	129	134	139	
gcc ctc aac ttc ctg gcc cgg aag aac cac ggg ccc cgg ggc tgg gtg				602
Ala Leu Asn Phe Leu Ala Arg Lys Asn His Gly Pro Arg Gly Trp Val				
140	145	150	155	
atc ttc act gtg gct ctg ctg ctg acc ctg gta gag gtc atc atc aat				650
Ile Phe Thr Val Ala Leu Leu Leu Thr Leu Val Glu Val Ile Ile Asn				
156	161	166	171	
aca gag tgg ctg atc atc acc ctg gtt cgg ggc agt ggc gag ggc ggc				698
Thr Glu Trp Leu Ile Ile Thr Leu Val Arg Gly Ser Gly Glu Gly Gly				
172	177	182	187	
cct cag ggc aac agc agc gca ggc tgg gcc gtg gcc tcc ccc tgt gcc				746
Pro Gln Gly Asn Ser Ser Ala Gly Trp Ala Val Ala Ser Pro Cys Ala				
188	193	198	203	
atc gcc aac atg gac ttt gtc atg gca ctc atc tac gtc atg ctg ctg				794
Ile Ala Asn Met Asp Phe Val Met Ala Leu Ile Tyr Val Met Leu Leu				
204	209	214	219	
ctg ctg ggt gcc ttc ctg ggg gcc tgg ccc gcc ctg tgt ggc cgc tac				842
Leu Leu Gly Ala Phe Leu Gly Ala Trp Pro Ala Leu Cys Gly Arg Tyr				
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Lys Arg Trp Arg Lys His Gly Val Phe Val Leu Leu Thr Thr Ala Thr				
236	241	246	251	
tcc gtt gcc ata tgg gtg gtg tgg atc gtc atg tat act tac ggc aac				938
Ser Val Ala Ile Trp Val Val Trp Ile Val Met Tyr Thr Tyr Gly Asn				
252	257	262	267	
aag cag cac aac agt ccc acc tgg gat gac ccc acg ctg gcc atc gcc				986
Lys Gln His Asn Ser Pro Thr Trp Asp Asp Pro Thr Leu Ala Ile Ala				
268	273	278	283	
ctc gcc gcc aat gcc tgg gcc ttc gtc ctc ttc tac gtc atc ccc gag				1034
Leu Ala Ala Asn Ala Trp Ala Phe Val Leu Phe Tyr Val Ile Pro Glu				
284	289	294	299	
gtc tcc cag gtg acc aag tcc agc cca gag caa agc tac cag ggg gac				1082
Val Ser Gln Val Thr Lys Ser Ser Pro Glu Gln Ser Tyr Gln Gly Asp				
300	305	310	315	
atg tac ccc acc cgg ggc gtg ggc tat gag acc atc ctg aaa gag cag				1130
Met Tyr Pro Thr Arg Gly Val Gly Tyr Glu Thr Ile Leu Lys Glu Gln				
316	321	326	331	
aag ggt cag agc atg ttc gtg gag aac aag gcc ttt tcc atg gat gag				1178
Lys Gly Gln Ser Met Phe Val Glu Asn Lys Ala Phe Ser Met Asp Glu				
332	337	342	347	

cgcggtgttcc atccaccaca tcagaaca	atg tcg tat gtt ttt gta aat gat	232
	Met Ser Tyr Val Phe Val Asn Asp	
	1 5	
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Ser Ser Gln Thr Asn Val Pro Leu Leu Gln Ala Cys Ile Asp Gly Asp		
9 14 19 24		
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Phe Asn Tyr Ser Lys Arg Leu Leu Glu Ser Gly Phe Asp Pro Asn Ile		
25 30 35 40		
cgt gac agc agg ggc aga aca ggc ctt cac ctt gca gca gct cga ggg	376	
Arg Asp Ser Arg Gly Arg Thr Gly Leu His Leu Ala Ala Ala Arg Gly		
41 46 51 56		
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Asn Val Asp Ile Cys Gln Leu Leu His Lys Phe Gly Ala Asp Leu Leu		
57 62 67 72		
gcc aca gat tat caa gga aac aca gct ctt cac ctc tgt ggc cat gtg	472	
Ala Thr Asp Tyr Gln Gly Asn Thr Ala Leu His Leu Cys Gly His Val		
73 78 83 88		
gat act atc caa ttt ttg gtt tcc aat gga ctc aaa att gat att tgc	520	
Asp Thr Ile Gln Phe Leu Val Ser Asn Gly Leu Lys Ile Asp Ile Cys		
89 94 99 104		
aat cat caa ggt gct acc cct tta gtt ctg gca aag cgc aga gga gta	568	
Asn His Gln Gly Ala Thr Pro Leu Val Leu Ala Lys Arg Arg Gly Val		
105 110 115 120		
aat aaa gat gtc atc cga ttg ctg gaa tct ttg gaa gaa cag gag gtg	616	
Asn Lys Asp Val Ile Arg Leu Leu Glu Ser Leu Glu Glu Gln Glu Val		
121 126 131 136		
aaa gga ttt aac aga gga acc cac tcg aaa ctg gag acc atg caa aca	664	
Lys Gly Phe Asn Arg Gly Thr His Ser Lys Leu Glu Thr Met Gln Thr		
137 142 147 152		
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Ala Glu Ser Glu Ser Ala Met Glu Ser His Ser Leu Leu Asn Pro Asn		
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Leu Gln Gln Gly Glu Gly Val Leu Ser Ser Phe Arg Thr Thr Trp Gln		
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Glu Phe Val Glu Asp Leu Gly Phe Trp Arg Val Leu Leu Leu Ile Phe		
185 190 195 200		
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Val Ile Ala Leu Leu Ser Leu Gly Ile Ala Tyr Tyr Val Ser Gly Val		
201 206 211 216		

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 ccc atg ctc gaa ggt gcg gag ctg tac ttc aac gtg gac cat ggc tac 228
 Met Leu Glu Gly Ala Glu Leu Tyr Phe Asn Val Asp His Gly Tyr
 1 5 10
 ctg gag ggc ctg gtt cga gga tgc aag gcc agc ctc ctg acc cag caa 276
 Leu Glu Gly Leu Val Arg Gly Cys Lys Ala Ser Leu Leu Thr Gln Gln
 16 21 26 31
 gac tat atc aac ctg gtc cag tgt gag acc cta gaa gac ctg aaa att 324
 Asp Tyr Ile Asn Leu Val Gln Cys Glu Thr Leu Glu Asp Leu Lys Ile
 32 37 42 47
 cat ctc cag act act gat tat ggt aac ttt ttg gct aat cac aca aat 372
 His Leu Gln Thr Thr Asp Tyr Gly Asn Phe Leu Ala Asn His Thr Asn
 48 53 58 63
 cct ctt act gtt tcc aaa att gac act gag atg agg aaa aga cta tgt 420
 Pro Leu Thr Val Ser Lys Ile Asp Thr Glu Met Arg Lys Arg Leu Cys
 64 69 74 79
 gga gaa ttt gag tat ttc cgg aat cat tcc ctg gag ccc ctc agc aca 468
 Gly Glu Phe Glu Tyr Phe Arg Asn His Ser Leu Glu Pro Leu Ser Thr
 80 85 90 95
 ttt ctc acc tat atg acg tgc agt tat atg ata gac aat gtg att ctg 516
 Phe Leu Thr Tyr Met Thr Cys Ser Tyr Met Ile Asp Asn Val Ile Leu
 96 101 106 111
 ctg atg aat ggt gca ttg cag aaa aaa tct gtg aaa gaa att ctg ggg 564
 Leu Met Asn Gly Ala Leu Gln Lys Lys Ser Val Lys Glu Ile Leu Gly
 112 117 122 127

aag tgc cac ccc ttg ggc cgt ttc aca gaa atg gaa gct gtc aac att	612
Lys Cys His Pro Leu Gly Arg Phe Thr Glu Met Glu Ala Val Asn Ile	
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gca gag aca cct tca gat ctc ttt aat gcc att ctg atc gaa acg cca	660
Ala Glu Thr Pro Ser Asp Leu Phe Asn Ala Ile Leu Ile Glu Thr Pro	
144 149 154 159	
tta gct cca ttc ttc caa gac tgc atg tct gaa aat gct cta gat gaa	708
Leu Ala Pro Phe Phe Gln Asp Cys Met Ser Glu Asn Ala Leu Asp Glu	
160 165 170 175	
ctg aat att gaa ttg cta cgc aat aaa cta tac aag tct tac ctt gag	756
Leu Asn Ile Glu Leu Leu Arg Asn Lys Leu Tyr Lys Ser Tyr Leu Glu	
176 181 186 191	
gca ttc tat aaa ttc tgt aag aat cat ggt gat gtc aca gca gaa gtt	804
Ala Phe Tyr Lys Phe Cys Lys Asn His Gly Asp Val Thr Ala Glu Val	
192 197 202 207	
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Met Cys Pro Ile Leu Glu Phe Glu Ala Asp Arg Arg Ala Phe Ile Ile	
208 213 218 223	
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224 229 234 239	
ctc tat cca acc ttc ggc aaa ctc tat cct gag ggg ttg cgg ctg ttg	948
Leu Tyr Pro Thr Phe Gly Lys Leu Tyr Pro Glu Gly Leu Arg Leu Leu	
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ctg aag gaa cag gaa att aga aat att gtg tgg ata gca gaa tgt att	1188
Leu Lys Glu Gln Glu Ile Arg Asn Ile Val Trp Ile Ala Glu Cys Ile	
320 325 330 335	
tca cag agg cat cga act aaa atc aac agt tac att cca att tta taa	1236
Ser Gln Arg His Arg Thr Lys Ile Asn Ser Tyr Ile Pro Ile Leu *	
336 341 346 351	

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 Met Ser Trp Leu Phe

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Pro Leu Thr Lys Ser Ala Ser Ser Ser Ala Ala Gly Ser Pro Gly Gly	
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Asn Ser His Ser Ser Ile Ala Glu Ile Gln Lys Asp Val Glu Tyr Arg	
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54 59 64 69	
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Pro Pro Gln Phe Pro Gln Glu Lys Pro Val Ile Ser Val Tyr Pro Pro	
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Ile Arg His His Leu Met Asp Lys Gln Gly Val Tyr Val Thr Ser Pro	
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Ser Thr Ala Phe Pro Tyr Leu Tyr Ser Asn Pro Ser Gly Met Ser Pro	
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Tyr Ala Ser Gln Gly Phe Pro Phe Leu Pro Pro Tyr Pro Pro Gln Glu	
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Ser Thr Thr Ser His Thr Thr Ala Lys Pro Ala Ala Pro Ser Phe Gly	
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Val Leu Ser Asn Leu Pro Leu Pro Ile Pro Thr Val Asp Ala Ser Ile	
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Pro Thr Ser Gln Asn Gly Phe Gly Tyr Lys Met Pro Asp Val Pro Asp	
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Glu Leu Ala Arg Lys Asn Leu Leu Leu Glu Pro Ser Leu Glu Ala Lys	
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His Cys Arg Arg Ala Lys Glu Glu Lys Leu Gln Gln Ala Ile Ala Met	
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His Ser Gln Phe His Ala Pro Leu *	
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cct	ctg	gattc	ctg	ga	agaaa	ggg	ttg	gtcc	cct	cag	cacc	ccc	cag	catcc	cg	gaaa	476			
atg	ggg	agc	aag	gct	ctg	cca	gcg	ccc	atc	ccg	ctc	cac	ccg	tgc	ctg	524				
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Gln	Leu	Thr	Asn	Tyr	Ser	Phe	Leu	Gln	Ala	Val	Asn	Thr	Phe	Pro	Ala					
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Thr	Val	Asp	His	Leu	Gln	Gly	Leu	Tyr	Gly	Leu	Ser	Ala	Val	Gln	Thr					
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Met	His	Met	Asn	His	Trp	Thr	Leu	Gly	Tyr	Pro	Asn	Val	His	Glu	Ile					
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Ala	Arg	Phe	Pro	Phe	Pro	Ala	Leu	Pro	Phe	Thr	Thr	His	Leu	Phe	His					
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ccc	aag	cag	ggg	gcc	att	gcc	cac	gtc	ctc	cca	gcc	ctg	cac	aag	gac	812				
Pro	Lys	Gln	Gly	Ala	Ile	Ala	His	Val	Leu	Pro	Ala	Leu	His	Lys	Asp					
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129					134				139					144						
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Cys	Gly	Arg	His	Phe	Thr	Lys	Ser	Tyr	Asn	Leu	Leu	Ile	His	Glu	Arg					
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Thr	His	Thr	Asp	Glu	Arg	Pro	Tyr	Thr	Cys	Asp	Ile	Cys	His	Lys	Ala					
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Glu Lys Pro Phe Lys Cys Gln Glu Cys Gly Lys Gly Phe Cys Gln Ser	
225 230 235 240	
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Arg Thr Leu Ala Val His Lys Thr Leu His Met Gln Thr Ser Ser Pro	
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Thr Ala Ala Ser Ser Ala Ala Lys Cys Ser Gly Glu Thr Val Ile Cys	
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Gly Gly Thr Ala *	
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Asn	Val	Leu	Glu	Trp	Ile	His	Gly	Leu	Ser	Leu	Phe	Leu	Arg	Gly	Ser		
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Leu	Ser	Phe	Ala	Asp	Tyr	Glu	Leu	Ala	Val	Arg	Glu	Glu	Thr	Leu	Leu		
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Leu	Glu	Ala	Phe	Gly	Pro	Cys	Leu	Pro	Asp	Pro	Lys	Ser	Gln	Met	Glu		
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Phe	Glu	Ala	Gln	Val	Phe	Lys	Asp	Pro	Asn	Glu	Phe	Asn	Asp	Met	*		
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2673

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Gln Glu Lys Lys Lys Gln Glu Ala Tyr Glu Gln Leu Leu Lys Glu Lys	
198 203 208 213	
ctc atg att gat gaa att gtt agg aag atc tat gaa gaa gat cag ttg	846
Leu Met Ile Asp Glu Ile Val Arg Lys Ile Tyr Glu Glu Asp Gln Leu	
214 219 224 229	
gaa aaa caa caa aag tta gaa aaa atg aat gca atg cga agg tat ata	894
Glu Lys Gln Gln Lys Leu Glu Lys Met Asn Ala Met Arg Arg Tyr Ile	
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Glu Glu Phe Gln Lys Glu Gln Ala Leu Trp Arg Lys Lys Lys Arg Glu	
246 251 256 261	
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Glu Met Glu Glu Glu Asn Arg Lys Ile Ile Glu Phe Ala Asn Met Gln	
262 267 272 277	
cag caa aga gaa gaa gat cgg atg gca aaa gtt caa gaa aat gag gag	1038
Gln Gln Arg Glu Glu Asp Arg Met Ala Lys Val Gln Glu Asn Glu Glu	
278 283 288 293	
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Lys Arg Leu Gln Leu Gln Asn Ala Leu Thr Gln Lys Leu Glu Glu Met	
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326 331 336 341	
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Gly Phe Ile Asn Ala Ile Ile Glu Glu Glu Arg Leu Lys Leu Leu Lys				
438	443	448	453	
gag cat gct aca aac tta cta ggc tat ctc cct aaa gga gta ttt aaa				1566
Glu His Ala Thr Asn Leu Leu Gly Tyr Leu Pro Lys Gly Val Phe Lys				
454	459	464	469	
aaa gag gat gat att gat ctg ctt ggt gaa gag ttc agg aaa gta tat				1614
Lys Glu Asp Asp Ile Asp Leu Leu Gly Glu Glu Phe Arg Lys Val Tyr				
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Gln Arg Pro Thr Ala Glu Leu Glu Gln Arg Asn Ile Leu Lys Pro
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cgg aat gaa caa gag gaa cag gag gag aag aga gag atc aag agg agg      670
Arg Asn Glu Gln Glu Glu Gln Glu Glu Lys Arg Glu Ile Lys Arg Arg
  48             53             58             63

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Leu Thr Arg Lys Leu Ser Gln Arg Pro Thr Val Glu Glu Leu Arg Glu
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gca gac aaa gct gcc atc cga aag gag ctc aat gaa ttc aaa agc act      862
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Phe Ile Ala His Val	Pro Val Pro Ser	Gln Gln Glu Ile	Glu Glu Ala	
239	244	249	254	
ctg gtg cga agg aag	aaa atg gaa ctc	ctc cag aag tat	gca agc gag	1116
Leu Val Arg Arg Lys	Lys Met Glu Leu	Leu Gln Lys Tyr	Ala Ser Glu	
255	260	265	270	
acc ctg cag gcc caa	agt gaa gaa gcc	aga agg ctc ctg	ggg tat tag	1164
Thr Leu Gln Ala Gln	Ser Glu Glu Ala	Arg Arg Leu Leu	Gly Tyr *	
271	276	281	286	
gacccagctg gggctctcct tggagttctt ccattccccca gtggtacctc aggacccagg				1224
gctgcagaca caggctggtg ctgcaagggc tcctgccccca ttctcagcct tccttccctc				1284
tccttgtctc atgttgaccg gagggtaggg gtctgtccct ggtcttcctg gtaggttttg				1344
tacacatatt ttgctactgt gtggatccat ttatttttat tgtggagtgt atacaacagg				1404
ttgcgaactg gcaaaaaaaaa aaaaaaaaaa				1434

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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (153)..(1058)

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ccaaaaaaaaag agatctctcg aggatccgaa ttcgcggccg cgtcgaccgc aggtccgcgc				120	
tgtgtcccgt	gttttctgcg	tgagaggaaa	ag	atg cta gaa cca cag gag aat	173
				Met Leu Glu Pro Gln Glu Asn	
			1	5	
ggc gtg att gac cta	cca gat tat gag	cat gta gaa gat	gaa act ttt	221	
Gly Val Ile Asp Leu	Pro Asp Tyr Glu	His Val Glu Asp	Glu Thr Phe		
8	13	18	23		
cct cct ttc cca cct	cca gcc tct cca	gag aga caa gat	ggg gaa gga	269	
Pro Pro Phe Pro Pro	Pro Ala Ser Pro	Glu Arg Gln Asp	Gly Glu Gly		
24	29	34	39		
act gag cct gat gaa	gag tca gga aat	gga gca cct gtt	cct gta cct	317	
Thr Glu Pro Asp Glu	Glu Ser Gly Asn	Gly Ala Pro Val	Pro Val Pro		
40	45	50	55		

cca aag aga aca gtt aaa aga aat ata ccc aag ctg gat gct cag aga	365
Pro Lys Arg Thr Val Lys Arg Asn Ile Pro Lys Leu Asp Ala Gln Arg	
56 61 66 71	
tta att tca gag aga gga ctt cca gcc tta agg cat gta ttt gat aag	413
Leu Ile Ser Glu Arg Gly Leu Pro Ala Leu Arg His Val Phe Asp Lys	
72 77 82 87	
gca aaa ttc aaa ggt aaa ggt cat gag gct gaa gac ttg aag atg cta	461
Ala Lys Phe Lys Gly Lys Gly His Glu Ala Glu Asp Leu Lys Met Leu	
88 93 98 103	
atc aga cac atg gag cac tgg gca cat agg cta ttc cct aaa ctg cag	509
Ile Arg His Met Glu His Trp Ala His Arg Leu Phe Pro Lys Leu Gln	
104 109 114 119	
ttt gag gat ttt att gac aga gtt gaa tac ctg gga agt aaa aag gaa	557
Phe Glu Asp Phe Ile Asp Arg Val Glu Tyr Leu Gly Ser Lys Lys Glu	
120 125 130 135	
gtt cag acc tgt tta aaa cga att cga ctt gat ctc cct att tta cat	605
Val Gln Thr Cys Leu Lys Arg Ile Arg Leu Asp Leu Pro Ile Leu His	
136 141 146 151	
gaa gat ttt gtt agc aat aat gat gaa gtt gcg gag aat aat gaa cat	653
Glu Asp Phe Val Ser Asn Asn Asp Glu Val Ala Glu Asn Asn Glu His	
152 157 162 167	
gat gtc act tct act gaa tta gat ccc ttt ctg aca aac tta tct gaa	701
Asp Val Thr Ser Thr Glu Leu Asp Pro Phe Leu Thr Asn Leu Ser Glu	
168 173 178 183	
agt gag atg ttt gct tct gag tta agt aga agc cta aca gaa gag caa	749
Ser Glu Met Phe Ala Ser Glu Leu Ser Arg Ser Leu Thr Glu Glu Gln	
184 189 194 199	
caa caa aga att gag aga aat aaa caa ctg gcc ttg gaa aga agg cag	797
Gln Gln Arg Ile Glu Arg Asn Lys Gln Leu Ala Leu Glu Arg Arg Gln	
200 205 210 215	
gca aag ctg ctg agt aat agt cag acc cta gga aat gat atg tta atg	845
Ala Lys Leu Leu Ser Asn Ser Gln Thr Leu Gly Asn Asp Met Leu Met	
216 221 226 231	
aat aca ccc agg gca cac acg gtt gaa gag gtt aat act gat gag gat	893
Asn Thr Pro Arg Ala His Thr Val Glu Glu Val Asn Thr Asp Glu Asp	
232 237 242 247	
caa aag gag gag tca aat gga tta aac gaa gac att ctg gac aat cca	941
Gln Lys Glu Glu Ser Asn Gly Leu Asn Glu Asp Ile Leu Asp Asn Pro	
248 253 258 263	
tgt aat gat gct att gcc aat act tta aat gaa gag gaa aca ctg ctg	989
Cys Asn Asp Ala Ile Ala Asn Thr Leu Asn Glu Glu Glu Thr Leu Leu	
264 269 274 279	
gac cag tct ttt aaa aat gtg caa cag caa ctt gat gct aca tcc aga	1037

Asp Gln Ser Phe Lys Asn Val Gln Gln Gln Leu Asp Ala Thr Ser Arg
 280 285 290 295
 aat att act gaa gct aga taa gt ttccattaag agaaaatgta tctgttaagt 1090
 Asn Ile Thr Glu Ala Arg *
 296 301
 catcgtcctg caagcttggc gttactatgt attttttctt cttggagtga aaatccttag 1150
 atagtaaaac tgttatagat tattgtttta aaaaaaaaaa aaaaaa 1196

<210> 907
 <211> 1816
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (105)..(1070)

<220>
 <221> misc_feature
 <222> (1)...(1816)
 <223> n = a,t,c or g

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 gccgctcggc gcctgcgcag tgaagaccgc ggcgagccgc gcgc atg cgt gca ggc 116
 Met Arg Ala Gly
 1

ccg gag ccc cag gcg ctg gtg ggg cag aaa cgc ggc gcc ctg cgt ctt 164
 Pro Glu Pro Gln Ala Leu Val Gly Gln Lys Arg Gly Ala Leu Arg Leu
 5 10 15 20

ctg gtt ccg agg ctg gtc ctc acc gtt tcc gct ccg gcg gaa gtg agg 212
 Leu Val Pro Arg Leu Val Leu Thr Val Ser Ala Pro Ala Glu Val Arg
 21 26 31 36

agg agg gtc ctt cga ccc gtg ctg agc tgg atg gac cgc gag acg cgc 260
 Arg Arg Val Leu Arg Pro Val Leu Ser Trp Met Asp Arg Glu Thr Arg
 37 42 47 52

gcc ctc gcc gac agc cac ttc cga ggc ctg ggg gtc gat gtc ccc ggc 308
 Ala Leu Ala Asp Ser His Phe Arg Gly Leu Gly Val Asp Val Pro Gly
 53 58 63 68

gtc ggc cag gct ccg ggc cgg gta gcc ttc gtc tcg gag ccg ggc gcc 356
 Val Gly Gln Ala Pro Gly Arg Val Ala Phe Val Ser Glu Pro Gly Ala
 69 74 79 84

ttc tcc tac gcc gac ttt gtg cgg ggc ttc ttg ctg ccc aac ctg ccc 404
 Phe Ser Tyr Ala Asp Phe Val Arg Gly Phe Leu Leu Pro Asn Leu Pro

85	90	95	100	
tgc gtg ttt tcc agc gcc ttc acg cag ggc tgg ggc agc cgg cgg cgc				452
Cys Val Phe Ser Ser Ala Phe Thr Gln Gly Trp Gly Ser Arg Arg Arg				
101	106	111	116	
tgg gtg acg ccc gcg ggg agg ccc gac ttc gac cac ctg cta cgg acc				500
Trp Val Thr Pro Ala Gly Arg Pro Asp Phe Asp His Leu Leu Arg Thr				
117	122	127	132	
tac gga gac gtg gtt gta cca gtt gca aac tgt ggg gtc cag gaa tac				548
Tyr Gly Asp Val Val Val Pro Val Ala Asn Cys Gly Val Gln Glu Tyr				
133	138	143	148	
aac tcg aac ccc aaa gag cac atg act ctc aga gac tac atc acc tac				596
Asn Ser Asn Pro Lys Glu His Met Thr Leu Arg Asp Tyr Ile Thr Tyr				
149	154	159	164	
tgg aaa gag tac ata cag gcg ggc tac tcc tct ccc agg ggc tgt ctc				644
Trp Lys Glu Tyr Ile Gln Ala Gly Tyr Ser Ser Pro Arg Gly Cys Leu				
165	170	175	180	
tac ctc aaa gac tgg cac ttg tgc agg gac ttt ccg gtg gag gac gtt				692
Tyr Leu Lys Asp Trp His Leu Cys Arg Asp Phe Pro Val Glu Asp Val				
181	186	191	196	
ttc acc ctg cct gtg tac ttc tcg tcc gac tgg ctg aat gag ttc tgg				740
Phe Thr Leu Pro Val Tyr Phe Ser Ser Asp Trp Leu Asn Glu Phe Trp				
197	202	207	212	
gat gca ctg gat gtg gat gac tac cgc ttt gtc tac gcg ggg cct gcg				788
Asp Ala Leu Asp Val Asp Asp Tyr Arg Phe Val Tyr Ala Gly Pro Ala				
213	218	223	228	
ggc agc tgg tcc ccg ttc cat gct gac atc ttc cgc tcc ttc agc tgg				836
Gly Ser Trp Ser Pro Phe His Ala Asp Ile Phe Arg Ser Phe Ser Trp				
229	234	239	244	
tct gtc aat gtc tgt ggg agg aag aag tgg ctc ctc ttc ccc cca ggg				884
Ser Val Asn Val Cys Gly Arg Lys Lys Trp Leu Leu Phe Pro Pro Gly				
245	250	255	260	
cag gaa gag gcc ctg ccg gac cgc cac ggc aac ctg ccc tac gac gtg				932
Gln Glu Glu Ala Leu Arg Asp Arg His Gly Asn Leu Pro Tyr Asp Val				
261	266	271	276	
acc tcc cca gca ctc tgc gac aca cac ctg cac cca ggg aac cag ctt				980
Thr Ser Pro Ala Leu Cys Asp Thr His Leu His Pro Gly Asn Gln Leu				
277	282	287	292	
gct ggc cca ccc ttg gag atc acg cag gaa gcg ggc gag atg gtg ttt				1028
Ala Gly Pro Pro Leu Glu Ile Thr Gln Glu Ala Gly Glu Met Val Phe				
293	298	303	308	
gtg ccc agt ggc tgg cac cac cag gtg cac aac ctg gga tga caccatc				1077
Val Pro Ser Gly Trp His His Gln Val His Asn Leu Gly *				
309	314	319		

tccatcaacc acaactgggt caatggcttc aacctggcca acatgtggcg cttcttgcag	1137
caggagctat gcgccgtgca ggaggaggtc agcgagtgga gggactccat gcccgactgg	1197
caccaccact gccagggtcat catgagggtcc tgctcgggca tcaactttga agagttttac	1257
cacttctca aggtcatcgc tgagaagagg ctcttggtcc tgagggaggc agccgctgag	1317
gacggtgctg gggtggggtt cgaacaggca gcctttgatg ttgggcgcac cacagagggtg	1377
ctggcctcct tgggtgcgca ccccgacttc cagagagtgg acaccagcgc gttctcacca	1437
cagcccaaag agctgctgca gcagctgaga gaggctgttg atgctgctgc ggccccatag	1497
cacctgtcgt gaggatagaa ggacgggtgg aagagaggca gcctcctgct ccggggccct	1557
tccagaaata aagaccgccc tccctgtgac ctggggccca cccctgtcga ggcttgtggc	1617
ctggctgttc atggccactg cctgggtgcc tgttttcagg gtgaaggccc aatggagggtc	1677
agggacccaa gatgggggatg gtggcccttc tgacctgcaa gcagggcctg ctggggnagc	1737
tcgggagaat gggtgccagg gacctnggct tcttttgggg gggcccctgg ccttccttta	1797
nggccaaggn acgccctga	1816

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 <211> 1995
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (117)..(1031)

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ggttatttga gccaaattac aggaatgtgt aatacttgag ggtagctgg agaaca	116
atg acc agg tat tgg gag ggc tgg tct caa cac att tca ctc ttc agg	164
Met Thr Arg Tyr Trp Glu Gly Trp Ser Gln His Ile Ser Leu Phe Arg	
1 5 10 15	
gag cca gtt gat aat ctg agt cct gag gag cgt gat gcc cgc aca gtt	212
Glu Pro Val Asp Asn Leu Ser Pro Glu Glu Arg Asp Ala Arg Thr Val	
17 22 27 32	
ttc tgt atg cag tta gct gcc cga att cgg cct cga gat ctg gag gac	260
Phe Cys Met Gln Leu Ala Arg Ile Arg Pro Arg Asp Leu Glu Asp	
33 38 43 48	
ttt ttc tct gct gta ggc aag gtt cgc gat gta cgt atc atc tca gat	308
Phe Phe Ser Ala Val Gly Lys Val Arg Asp Val Arg Ile Ile Ser Asp	

49	54	59	64	
cgg aac tca cgt cgt tct aag ggc att gcc tac gtg gaa ttc tgt gaa Arg Asn Ser Arg Arg Ser Lys Gly Ile Ala Tyr Val Glu Phe Cys Glu 65 70 75 80				356
atc cag tct gtg cca ctg gcc att ggg ctg act ggg cag cgg ttg ctg Ile Gln Ser Val Pro Leu Ala Ile Gly Leu Thr Gly Gln Arg Leu Leu 81 86 91 96				404
gga gtg cct atc att gta cag gct tca cag gca gag aaa aac cga ctg Gly Val Pro Ile Ile Val Gln Ala Ser Gln Ala Glu Lys Asn Arg Leu 97 102 107 112				452
gca gcc atg gcc aac aac ctg caa aag ggc aat ggt gga cca atg cgc Ala Ala Met Ala Asn Asn Leu Gln Lys Gly Asn Gly Gly Pro Met Arg 113 118 123 128				500
ctc tat gtg ggt tcc ctg cac ttc aat atc act gaa gac atg ctc cgg Leu Tyr Val Gly Ser Leu His Phe Asn Ile Thr Glu Asp Met Leu Arg 129 134 139 144				548
ggc atc ttt gag ccc ttt ggt aaa att gat aat att gtc ctg atg aag Gly Ile Phe Glu Pro Phe Gly Lys Ile Asp Asn Ile Val Leu Met Lys 145 150 155 160				596
gac tca gat aca ggc cgc tct aaa ggt tat ggt ttc atc acg ttc tct Asp Ser Asp Thr Gly Arg Ser Lys Gly Tyr Gly Phe Ile Thr Phe Ser 161 166 171 176				644
gat tct gag tgt gcc cgg cgg gcc ctg gaa cag ttg aat ggg ttt gag Asp Ser Glu Cys Ala Arg Arg Ala Leu Glu Gln Leu Asn Gly Phe Glu 177 182 187 192				692
ctt gct ggt cga cct atg agg gtt ggc cat gtg act gag cga ctg gat Leu Ala Gly Arg Pro Met Arg Val Gly His Val Thr Glu Arg Leu Asp 193 198 203 208				740
ggt ggc aca gac atc act ttt cct gat ggg gac cag gag ctg gat ctg Gly Gly Thr Asp Ile Thr Phe Pro Asp Gly Asp Gln Glu Leu Asp Leu 209 214 219 224				788
gga tca gca ggt gga cgt ttt cag ctc atg gca aaa ctg gca gaa ggc Gly Ser Ala Gly Gly Arg Phe Gln Leu Met Ala Lys Leu Ala Glu Gly 225 230 235 240				836
gct gga atc caa ctg cca agc act gct gct gct gct gct gcc gcc gcc Ala Gly Ile Gln Leu Pro Ser Thr Ala Ala Ala Ala Ala Ala Ala 241 246 251 256				884
gcc gcc ccg gct gct gcc ttg caa ctg aat gga gca gtt ccc ttg ggg Ala Ala Pro Ala Ala Ala Leu Gln Leu Asn Gly Ala Val Pro Leu Gly 257 262 267 272				932
gcc ctg aat cca gca gct ctg act gct ctg agt cca gcc ctg aac ctt Ala Leu Asn Pro Ala Ala Leu Thr Ala Leu Ser Pro Ala Leu Asn Leu 273 278 283 288				980

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gcc tcc cag tgt ttg cag ctc tcc agc ctc ttt acc ccc cag acc atg      1028
Ala Ser Gln Cys Leu Gln Leu Ser Ser Leu Phe Thr Pro Gln Thr Met
289                               294                               299                               304

taa atca gtggcacagt atactgcctc cttgtgcctc tggatcctgc cacttcacat      1085
*
305

ctactcttcc atggcccat ttctccattt tgtggaccaa gccatcctga gggcatggac      1145
attgtctctg aggaaattgg ggccaccctt aagataccaa gaaaagctcc tgcccatggt      1205
cccactggaa atggactctg ctgagcaaag ccaccagttg aagagaacag aatccacacc      1265
tgcattgaat acctgtttct ccatgtgtat cgtctctgag attaccttct tgccttttcc      1325
aacaccttag tgattcctca atttctcccc cattgggaag gccatagggc attaactgaa      1385
ggaactgacc tctctccttt tctgtacct ttaaccttta gtctgtcaag gaaaaccctt      1445
aggacctctg aatcaagagg actgagtttg tgggtgaacc ttgaagggtgc tctttctgct      1505
acaagggccc tgggagatag catggacgtg cattgagaag ccagcctcag accttagctt      1565
gaagcagctt gaggccagac ctactgtagc ctcagcatct tgctaggagg catggaagtg      1625
atctatcctg ccaggaggcc tcagagtgat ctgtcctgcc aggaggtgtg agagtgatct      1685
gtcctgtgag gcatttaggg gctttcagga atttagtaaa aggtggagta tgcctttcca      1745
gtatcttcca tcttcctttg tatacttgtc cttcctccca tttcctccct ttggcccagag      1805
gtaggaggat ggagggaggc tgctactcta ccacttctg tgtgcctcta ctgtggcctc      1865
aaccctggca attatagcta ctcccatccc ttacctgggc atgtgtgagc ccttctcact      1925
ggattttata cccttgtgtc tgtgtacata aatatatata catatatata tacataaaaa      1985
aaaaaaaaa                                                                1995

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<210> 909
<211> 2268
<212> DNA
<213> Homo sapiens

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<220>
<221> CDS
<222> (445)..(1539)

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tcgtcgctg cggtac'cggt ccggaattcc cgggtcgacc cacgcgtccg cctgcacctt      60
cgccccgcgt acctactcct gccccgcct gccattcctc tccccctcct tctctctgcg      120

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170	175	180	185	
gac cag gag ggg gca	gaa ggc acc ctg tcg	tgg ctg ggc acc gtc ttc		1047
Asp Gln Glu Gly Ala	Glu Gly Thr Leu Ser	Trp Leu Gly Thr Val Phe		
186	191	196	201	
ggc gtg ctg gct agc	ctc tgt gtc tcg ctc	aac gcc atc tac acc acg		1095
Gly Val Leu Ala Ser	Leu Cys Val Ser Leu	Asn Ala Ile Tyr Thr Thr		
202	207	212	217	
aag gtg ctc ccg gcg	gtg gac ggc agc atc	tgg cgc ctg act ttc tac		1143
Lys Val Leu Pro Ala	Val Asp Gly Ser Ile	Trp Arg Leu Thr Phe Tyr		
218	223	228	233	
aac aac gtc aac gcc	tgc atc ctc ttc ctg	ccc ctg ctc ctg ctg ctc		1191
Asn Asn Val Asn Ala	Cys Ile Leu Phe Leu	Pro Leu Leu Leu Leu Leu		
234	239	244	249	
ggg gag ctt cag gcc	ctg cgt gac ttt gcc	cag ctg ggc agt gcc cac		1239
Gly Glu Leu Gln Ala	Leu Arg Asp Phe Ala	Gln Leu Gly Ser Ala His		
250	255	260	265	
ttc tgg ggg atg atg	acg ctg ggc ggc ctg	ttt ggc ttt gcc atc ggc		1287
Phe Trp Gly Met Met	Thr Leu Gly Gly Leu	Phe Gly Phe Ala Ile Gly		
266	271	276	281	
tac gtg aca gga ctg	cag atc aag ttc acc	agt ccg ctg acc cac aat		1335
Tyr Val Thr Gly Leu	Gln Ile Lys Phe Thr	Ser Pro Leu Thr His Asn		
282	287	292	297	
gtg tcg ggc acg gcc	aag gcc tgt gcc cag	aca gtg ctg gcc gtg ctc		1383
Val Ser Gly Thr Ala	Lys Ala Cys Ala Gln	Thr Val Leu Ala Val Leu		
298	303	308	313	
tac tac gag gag acc	aag agc ttc ctc tgg	tgg acg agc aac atg atg		1431
Tyr Tyr Glu Glu Thr	Lys Ser Phe Leu Trp	Trp Thr Ser Asn Met Met		
314	319	324	329	
gtg ctg ggc ggc tcc	tcc gcc tac acc tgg	gtc agg ggc tgg gag atg		1479
Val Leu Gly Gly Ser	Ser Ala Tyr Thr Trp	Val Arg Gly Trp Glu Met		
330	335	340	345	
aag aag act ccg gag	gag ccc agc ccc aaa	gac agc gag aag agc gcc		1527
Lys Lys Thr Pro Glu	Glu Pro Ser Pro Lys	Asp Ser Glu Lys Ser Ala		
346	351	356	361	
atg ggg gtg tga gca	ccacaggcac cctggatggc	ccggccccgg ggcccgtaca		1582
Met Gly Val *				
362				
caggcagggc cagcacagta	gtgaaggcgg tctcctggac	cccagaagcg tgctgtggtg		1642
tggactgggt gctacttata	gacccaatca gaatacgggtg	gttgagaagg aaccagtgtt		1702
tacaagtaat atcagaaagt	tgaaggaacc agtgtttaca	agtaatacca gaaagttgcc		1762
aaacccttct ctatcctctc	gtattttctga gtttttgtcc	ttcccagagg agcacctag		1822

tgagagttga accccttcct tctgcctcca gggcctgtct gcctccacat cactctgagg	1882
acagggacag gcaacaacct tgaagggaca gcaatggcaa agccacaaag gcttcactgt	1942
actcagggga gatggcccta ccacagccac ctggagaggg ttgggaagcc ttccgtctgc	2002
ggtgggcagg cagcctcacc ctggggccac agaccggcct tcctttggag gaaagtgtgg	2062
cctggactga gggaggaaat gagcgagttc cctctgacac cagcagatcc ccaggggctg	2122
ctgggcagtg gcctgggaat ggggtggatt gtgagaaagt gctcaccatc tatacacct	2182
gtatgtccag cttttgaaca caaggaaca tgcttctctt agaggttaag cagggtcatt	2242
aacatcctcc ccagtcctt aacatg	2268

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 <211> 1116
 <212> DNA
 <213> Homo sapiens

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 <221> CDS
 <222> (163)..(789)

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ctaaagggaa taagcttgcg gccgccgca gtctggtatc ctgagcttcg tgagttgagc	120
gctgctgctc cgcggtggag tcaccgcacc gctcccggga tc	174
	atg gtg ttc tac Met Val Phe Tyr 1
ttc acc agc agc agc gtt aat tca tct gcc tac act att tac atg gga	222
Phe Thr Ser Ser Ser Val Asn Ser Ser Ala Tyr Thr Ile Tyr Met Gly	
5 10 15 20	
aaa gat aaa tat gaa aat gaa gat ctg atc aag cat ggc tgg cct gaa	270
Lys Asp Lys Tyr Glu Asn Glu Asp Leu Ile Lys His Gly Trp Pro Glu	
21 26 31 36	
gat atc tgg ttt cat gtg gac aaa ctc tct tcg gct cat gta tac ctt	318
Asp Ile Trp Phe His Val Asp Lys Leu Ser Ser Ala His Val Tyr Leu	
37 42 47 52	
cga tta cat aag gga gag aat ata gaa gac atc cca aag gaa gtg ctg	366
Arg Leu His Lys Gly Glu Asn Ile Glu Asp Ile Pro Lys Glu Val Leu	
53 58 63 68	
atg gac tgt gcc cac ctt gtg aag gcc aat agc att caa ggc tgc aag	414
Met Asp Cys Ala His Leu Val Lys Ala Asn Ser Ile Gln Gly Cys Lys	
69 74 79 84	

atg aac aac gtt aat gtg gta tat acg ccg tgg tct aac ctg aag aaa	462
Met Asn Asn Val Asn Val Val Tyr Thr Pro Trp Ser Asn Leu Lys Lys	
85 90 95 100	
aca gct gac atg gat gtg ggg cag ata ggc ttt cac agg cag aag gat	510
Thr Ala Asp Met Asp Val Gly Gln Ile Gly Phe His Arg Gln Lys Asp	
101 106 111 116	
gta aaa att gtg aca gtg gag aag aaa gta aat gag atc ctg aac cga	558
Val Lys Ile Val Thr Val Glu Lys Lys Val Asn Glu Ile Leu Asn Arg	
117 122 127 132	
tta gaa aag acc aaa gtc gag cgg ttc tca gac cta gca gca gag aaa	606
Leu Glu Lys Thr Lys Val Glu Arg Phe Ser Asp Leu Ala Ala Glu Lys	
133 138 143 148	
gaa tgc aga gat cgt gaa gag agg aat gag aaa aaa gcc caa att cag	654
Glu Cys Arg Asp Arg Glu Glu Arg Asn Glu Lys Lys Ala Gln Ile Gln	
149 154 159 164	
gaa atg aaa aag aga gaa aaa gaa gaa atg aag aag aag agg gaa atg	702
Glu Met Lys Lys Arg Glu Lys Glu Glu Met Lys Lys Lys Arg Glu Met	
165 170 175 180	
gat gaa ctt agg agc tat tca tca cta atg aaa gtt gaa aat atg tct	750
Asp Glu Leu Arg Ser Tyr Ser Ser Leu Met Lys Val Glu Asn Met Ser	
181 186 191 196	
tca aat cag gat ggc aat gat tca gat gaa ttc atg taa aaggagaaaa	799
Ser Asn Gln Asp Gly Asn Asp Ser Asp Glu Phe Met *	
197 202 207	
ggagaaaagg acctttgaaa gatgtgaatg tagagacaat tgcagacctt ttggtttcat	859
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gattttcaag ttttaaaaaa attgtacctt ttttgctgac agaaaaggat cagatatgta	979
taaaatagtt gaacttgaca gcatataact taaagtgaaa atgtttttgc cagaacatgt	1039
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ccaaaggaac gaatattcct gccccacaga gtcccgctctt tgggtgaggct gtttctggag 180

tttac atg atg acc aag gta cta ggc atg gcc cca gtt ctg ggc cct 227
Met Met Thr Lys Val Leu Gly Met Ala Pro Val Leu Gly Pro
1 5 10

agg cct cca cag gag caa gtg ggg cct ctg atg gta aaa gtc gag gag 275
Arg Pro Pro Gln Glu Gln Val Gly Pro Leu Met Val Lys Val Glu Glu
15 20 25 30

aaa gaa gag aaa ggc aag tac ctt cct agc ctg gag atg ttc cgc cag 323
Lys Glu Glu Lys Gly Lys Tyr Leu Pro Ser Leu Glu Met Phe Arg Gln
31 36 41 46

cgc ttc agg cag ttt ggg tac cat gat acc cct gga ccc cga gag gcc 371
Arg Phe Arg Gln Phe Gly Tyr His Asp Thr Pro Gly Pro Arg Glu Ala
47 52 57 62

ctg agc caa ctc cgg gtg ctc tgc tgt gag tgg ctg agg ccc gag atc 419
Leu Ser Gln Leu Arg Val Leu Cys Cys Glu Trp Leu Arg Pro Glu Ile
63 68 73 78

cac acc aag gag cag atc ctg gag cta ctg gtg ctg gag cag ttc ctg 467
His Thr Lys Glu Gln Ile Leu Glu Leu Leu Val Leu Glu Gln Phe Leu
79 84 89 94

acc atc ctg ccc cag gag ctc cag gcc tgg gtg cag gag cat tgc ccg 515
Thr Ile Leu Pro Gln Glu Leu Gln Ala Trp Val Gln Glu His Cys Pro
95 100 105 110

gag agc gct gaa gag gct gtc act ctc ctc gaa gat ctg gag cgg gaa 563
Glu Ser Ala Glu Glu Ala Val Thr Leu Leu Glu Asp Leu Glu Arg Glu
111 116 121 126

ctg gat gag cca gga cac cag gtc tca act cct cca aac gaa cag aaa 611
Leu Asp Glu Pro Gly His Gln Val Ser Thr Pro Pro Asn Glu Gln Lys
127 132 137 142

ccg gtg tgg gag aag ata tcc tcc tca gga act gca aag gaa tcc ccg 659
Pro Val Trp Glu Lys Ile Ser Ser Ser Gly Thr Ala Lys Glu Ser Pro
143 148 153 158

agc agc atg cag cca cag ccc ttg gag acc agt cac aaa tac gag tct 707
Ser Ser Met Gln Pro Gln Pro Leu Glu Thr Ser His Lys Tyr Glu Ser
159 164 169 174

tgg ggg ccc ctg tac atc caa gag tct ggt gag gag cag gag ttc gct 755
Trp Gly Pro Leu Tyr Ile Gln Glu Ser Gly Glu Glu Gln Glu Phe Ala
175 180 185 190

caa gat cca aga aag gtc cga gat tgc aga ttg agt acc cag cac gag 803
Gln Asp Pro Arg Lys Val Arg Asp Cys Arg Leu Ser Thr Gln His Glu

191	196	201	206	
gaa tca gca gat gag	cag aaa ggt tct	gaa gca gag ggg ctc	aaa ggg	851
Glu Ser Ala Asp Glu	Gln Lys Gly Ser	Glu Ala Glu Gly	Leu Lys Gly	
207	212	217	222	
gat ata att tct gtg	att atc gcc aat	aaa cct gag gcc	agc tta gag	899
Asp Ile Ile Ser Val	Ile Ile Ala Asn	Lys Pro Glu Ala	Ser Leu Glu	
223	228	233	238	
agg cag tgc gta aac	ctt gaa aat gaa	aaa gga aca aaa	ccc cct ctt	947
Arg Gln Cys Val Asn	Leu Glu Asn Glu	Lys Gly Thr Lys	Pro Pro Leu	
239	244	249	254	
caa gag gca ggc tcc	aag aaa ggt aga	gaa tca gtt cct	act aaa cct	995
Gln Glu Ala Gly Ser	Lys Lys Gly Arg	Glu Ser Val Pro	Thr Lys Pro	
255	260	265	270	
acc cca gga gag aga	cgt tat ata tgt	gct gaa tgt ggc	aaa gcc ttt	1043
Thr Pro Gly Glu Arg	Arg Tyr Ile Cys	Ala Glu Cys Gly	Lys Ala Phe	
271	276	281	286	
agt aat agc tca aat	ctc acc aaa cac	agg aga aca cac	act ggg gag	1091
Ser Asn Ser Ser Asn	Leu Thr Lys His	Arg Arg Thr His	Thr Gly Glu	
287	292	297	302	
aaa cct tac gtg tgc	acc aag tgt ggg	aaa gct ttc agc	cac agc tca	1139
Lys Pro Tyr Val Cys	Thr Lys Cys Gly	Lys Ala Phe Ser	His Ser Ser	
303	308	313	318	
aac ctc acc ctc cac	tac aga aca cac	ttg gtg gac cgg	ccc tat gac	1187
Asn Leu Thr Leu His	Tyr Arg Thr His	Leu Val Asp Arg	Pro Tyr Asp	
319	324	329	334	
tgt aag tgt gga aaa	gct ttt ggg cag	agc tca gac ctt	ctt aaa cat	1235
Cys Lys Cys Gly Lys	Ala Phe Gly Gln	Ser Ser Asp Leu	Leu Lys His	
335	340	345	350	
cag aga atg cac aca	gaa gag gcg cca	tat cag tgc aaa	gat tgt ggc	1283
Gln Arg Met His Thr	Glu Glu Ala Pro	Tyr Gln Cys Lys	Asp Cys Gly	
351	356	361	366	
aag gct ttc agc ggg	aaa ggc agc ctc	att cgt cac tat	cgg atc cac	1331
Lys Ala Phe Ser Gly	Lys Gly Ser Leu	Ile Arg His Tyr	Arg Ile His	
367	372	377	382	
act ggg gag aag cct	tat cag tgt aac	gaa tgt ggg aag	agc ttc agt	1379
Thr Gly Glu Lys Pro	Tyr Gln Cys Asn	Glu Cys Gly Lys	Ser Phe Ser	
383	388	393	398	
cag cat gcg ggc ctc	agc tcc cac cag	aga ctc cac acc	gga gag aag	1427
Gln His Ala Gly Leu	Ser Ser His Gln	Arg Leu His Thr	Gly Glu Lys	
399	404	409	414	
cca tat aag tgt aag	gag tgt ggg aaa	gcc ttc aac cac	agc tcc aac	1475
Pro Tyr Lys Cys Lys	Glu Cys Gly Lys	Ala Phe Asn His	Ser Ser Asn	
415	420	425	430	

tcc aag gca gct gca gat ttg atg gcc tac tgt gaa gca cat gcc aag	445
Ser Lys Ala Ala Ala Asp Leu Met Ala Tyr Cys Glu Ala His Ala Lys	
31 36 41 46	
gaa gac ccc ctc ctg acc cct gtt ccg gct tca gaa aac ccg ttt agg	493
Glu Asp Pro Leu Leu Thr Pro Val Pro Ala Ser Glu Asn Pro Phe Arg	
47 52 57 62	
gag aag aag ttt ttc tgt gcc atc ctt taa g tctttgagag gggcctgaag	544
Glu Lys Lys Phe Phe Cys Ala Ile Leu *	
63 68	
agcctccggg ctctctgggac attgatgtag agtttttagt gaagtgggca cctttctagt	604
ccacggcatt tgaagagagc gaggagaacc attctggaaa ctctaggcta tgcattgttta	664
aagatctggg cccctttatg agaatgcaag ccgatccaca tcctgactta agagatctga	724
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ctgctatccc ccagcccccc cccccccaaa atcctcatgt ttctgcttca tattttgaaa	844
aataacaatt aaaacagaca gctgtactga ggtaagatat gtgtgacctt cttggaatga	904
atattgtctt tagaataccc ttgataagc tgagctgtcc cgtgtagatg caattcgggt	964
taatggcatt gatgtatagt cactgtgcct ttctttttct ttcttccttc tcctctaccc	1024
ctccttccac ccctccccat tagagtagtg tggagataag gctggactgg tctatcagat	1084
tgaactccaa gaatgatcac acaaaatggt tagggagatg ttccccgtgg tgtatcctca	1144
tggtacaac gacaaaaaat gccggtgtgc tgtgttctct tttcactatt cctaacatgt	1204
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	Met Ala Ser Trp Pro Ser	

1

gtc tac cac gta gtg agc ggg aag atg ctg atc ctt tac gac aaa gac	160
Val Tyr His Val Val Ser Gly Lys Met Leu Ile Leu Tyr Asp Lys Asp	
7 12 17 22	
ccc tgc tcc cct gtt tct gtg ccc tac ttg agt cct cta gta ctc cgt	208
Pro Cys Ser Pro Val Ser Val Pro Tyr Leu Ser Pro Leu Val Leu Arg	
23 28 33 38	
aaa gaa ctt gaa tct ttg cta gaa aat gaa ggt gat cag gtg att cat	256
Lys Glu Leu Glu Ser Leu Leu Glu Asn Glu Gly Asp Gln Val Ile His	
39 44 49 54	
aca tct tct ttc atc aat caa cat cca atc att ttc tgg acc ctc gtt	304
Thr Ser Ser Phe Ile Asn Gln His Pro Ile Ile Phe Trp Thr Leu Val	
55 60 65 70	
tgg tat ttc aga cgt ttg gac ctt cct agt aac ttg cca gga ctt atc	352
Trp Tyr Phe Arg Arg Leu Asp Leu Pro Ser Asn Leu Pro Gly Leu Ile	
71 76 81 86	
ctc aca tct gaa cat tgt aat gaa ggt gta cag ctt cct ctg tca tct	400
Leu Thr Ser Glu His Cys Asn Glu Gly Val Gln Leu Pro Leu Ser Ser	
87 92 97 102	
ctg tcc cag gat agc aaa ctt gtg tat att cag ctg tta tgg gat aat	448
Leu Ser Gln Asp Ser Lys Leu Val Tyr Ile Gln Leu Leu Trp Asp Asn	
103 108 113 118	
atc aac ctt cat cag gaa cca aga gaa cct ctg tat gtc tca tgg agg	496
Ile Asn Leu His Gln Glu Pro Arg Glu Pro Leu Tyr Val Ser Trp Arg	
119 124 129 134	
aat ttt aat tct gaa aag aaa tca tct ctc ctg tca gag gaa caa caa	544
Asn Phe Asn Ser Glu Lys Lys Ser Ser Leu Leu Ser Glu Glu Gln Gln	
135 140 145 150	
gaa aca agc act tta gta gaa acc atc agg cag agt att cag cac aat	592
Glu Thr Ser Thr Leu Val Glu Thr Ile Arg Gln Ser Ile Gln His Asn	
151 156 161 166	
aat gtt ctt aaa ccc atc aac cta ctt tca cag caa atg aag cca ggc	640
Asn Val Leu Lys Pro Ile Asn Leu Leu Ser Gln Gln Met Lys Pro Gly	
167 172 177 182	
atg aaa aga caa agg agt tta tac aga gaa atc ctc ttc tta tca tta	688
Met Lys Arg Gln Arg Ser Leu Tyr Arg Glu Ile Leu Phe Leu Ser Leu	
183 188 193 198	
gtg tct cta gga aga gag aat att gat att gag gca ttt gac aat gaa	736
Val Ser Leu Gly Arg Glu Asn Ile Asp Ile Glu Ala Phe Asp Asn Glu	
199 204 209 214	
tat gga att gca tac aat agt ctg tct tca gag att ctt gaa agg ttg	784
Tyr Gly Ile Ala Tyr Asn Ser Leu Ser Ser Glu Ile Leu Glu Arg Leu	
215 220 225 230	

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gcc ctg tgg tca gcc agc ttg agg ctg ggc act tct tgc atg cat cca	874
Ala Leu Trp Ser Ala Ser Leu Arg Leu Gly Thr Ser Ser Met His Pro	
17 22 27 32	
tca cca aga agc atc tct ttg cct ctg tcc atg atg ctg tca cct ttg	922
Ser Pro Arg Ser Ile Ser Leu Pro Leu Ser Met Met Leu Ser Pro Leu	
33 38 43 48	
ccc tcc aac acc cga ggc ctg tcc ccg aca gcc ctg ttt cgg tca cca	970
Pro Ser Asn Thr Arg Gly Leu Ser Pro Thr Ala Leu Phe Arg Ser Pro	
49 54 59 64	
gac tct gaa cat gct aca tcc tgc cca aga ctg cac ctc tgg agg tgc	1018
Asp Ser Glu His Ala Thr Ser Cys Pro Arg Leu His Leu Trp Arg Cys	
65 70 75 80	
agg gca ccc ttg aga agc ccc tca ccc cta ggc cgc ctc cag gtg cta	1066
Arg Ala Pro Leu Arg Ser Pro Ser Pro Leu Gly Arg Leu Gln Val Leu	
81 86 91 96	
ccc agg agt ccc ctc cat gta cac aca cac aac tca ggg aag gag gtc	1114
Pro Arg Ser Pro Leu His Val His Thr His Asn Ser Gly Lys Glu Val	
97 102 107 112	
ctg gga ctc caa gtt cag cgc tcc agg tct ggg aca ggg cct gca tgc	1162
Leu Gly Leu Gln Val Gln Arg Ser Arg Ser Gly Thr Gly Pro Ala Cys	
113 118 123 128	
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Ser Gln Ala Gly Ser Gly Ala Val Gln Gly Gly Asn Trp Cys Ile Phe	
129 134 139 144	
tag cctc aggaatanag ctaaataaat aaataaataa ataaataaat aaatagtatg	1267
* 145	
attcttctat gaaatcaggt gaattttata atacgaaact caccatgaaa atatgacttt	1327
caaatttcaa aaatccatcc tgacacagtg gctcaagtct taggccagct actcgggggg	1387
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agcggcgggt tccccgggat cgagggacgc gcacgccaga ggagacgaaa ggaacccggg	180
tcggaccaga tcggaaccac tgaccattgc cc atg gcg gcc cta ggc cct agc	233
Met Ala Ala Leu Gly Pro Ser	
1 5	
agc cag aat gtc act gaa tac gtc gtt cga gtt cct aag aat aca acc	281
Ser Gln Asn Val Thr Glu Tyr Val Val Arg Val Pro Lys Asn Thr Thr	
8 13 18 23	
aaa aaa tat aac atc atg gct ttt aat gca gcc gac aaa gtc aac ttt	329
Lys Lys Tyr Asn Ile Met Ala Phe Asn Ala Ala Asp Lys Val Asn Phe	
24 29 34 39	
gct acg tgg aat cag gct cgg ctg gag cgg gac ttg agc aac aag aaa	377
Ala Thr Trp Asn Gln Ala Arg Leu Glu Arg Asp Leu Ser Asn Lys Lys	
40 45 50 55	
atc tac caa gag gag gag atg ccc gaa tcg ggc gcg ggc agt gag ttc	425
Ile Tyr Gln Glu Glu Glu Met Pro Glu Ser Gly Ala Gly Ser Glu Phe	
56 61 66 71	
aac cgc aag ctt cgg gag gag gct cgg agg aag aag tac ggc atc gtc	473
Asn Arg Lys Leu Arg Glu Glu Ala Arg Arg Lys Lys Tyr Gly Ile Val	
72 77 82 87	
ctc aag gag ttc cgg ccc gag gac cag ccc tgg ctg ctc cgg gtc aac	521
Leu Lys Glu Phe Arg Pro Glu Asp Gln Pro Trp Leu Leu Arg Val Asn	
88 93 98 103	
ggc aaa tca ggc agg aag ttc aag ggc atc aag aag gga ggc gta aca	569
Gly Lys Ser Gly Arg Lys Phe Lys Gly Ile Lys Lys Gly Gly Val Thr	
104 109 114 119	
gag aac acg tcc tac tac atc ttc acc cag tgc ccc gac ggg gcc ttc	617
Glu Asn Thr Ser Tyr Tyr Ile Phe Thr Gln Cys Pro Asp Gly Ala Phe	
120 125 130 135	
gag gcc ttc ccc gtg cac aac tgg tac aat ttc aca ccg ctg gcc cgg	665
Glu Ala Phe Pro Val His Asn Trp Tyr Asn Phe Thr Pro Leu Ala Arg	
136 141 146 151	
cat cgc acg ctc act gcc gag gag gcc gag gag gag tgg gag agg agg	713
His Arg Thr Leu Thr Ala Glu Glu Ala Glu Glu Glu Trp Glu Arg Arg	
152 157 162 167	
aac aag gtg ctg aac cac ttc agc atc atg cag cag cgg cgg ctc aag	761
Asn Lys Val Leu Asn His Phe Ser Ile Met Gln Gln Arg Arg Leu Lys	
168 173 178 183	
gat cag gac cag gac gag gat gag gag gag aag gag aaa cgt ggc cgc	809
Asp Gln Asp Gln Asp Glu Asp Glu Glu Glu Lys Glu Lys Arg Gly Arg	
184 189 194 199	

agg aag gcg agc gag ctg cgc atc cac gac ctg gag gac gac ctg gag	857
Arg Lys Ala Ser Glu Leu Arg Ile His Asp Leu Glu Asp Asp Leu Glu	
200 205 210 215	
atg tcg tcc gat gcc agt gat gcc agt ggt gag gag ggg ggc aga gtc	905
Met Ser Ser Asp Ala Ser Asp Ala Ser Gly Glu Glu Gly Gly Arg Val	
216 221 226 231	
ccc aag gcc aag aag aag gcg ccg ctg gcc aag ggc ggc agg aaa aag	953
Pro Lys Ala Lys Lys Lys Ala Pro Leu Ala Lys Gly Gly Arg Lys Lys	
232 237 242 247	
aag aag aag aag ggt tca gac gac gag gcc ttc gag gac agc gat gat	1001
Lys Lys Lys Lys Gly Ser Asp Asp Glu Ala Phe Glu Asp Ser Asp Asp	
248 253 258 263	
ggg gac ttc gag ggc caa gag gtg gac tac atg tca gac ggc tcc agt	1049
Gly Asp Phe Glu Gly Gln Glu Val Asp Tyr Met Ser Asp Gly Ser Ser	
264 269 274 279	
agc tcc caa gaa gag cct gag agc aag gcc aag gcg ccg cag cag gag	1097
Ser Ser Gln Glu Glu Pro Glu Ser Lys Ala Lys Ala Pro Gln Gln Glu	
280 285 290 295	
gag ggg ccc aag ggt gtc gat gag cag agc gac agt agt gag gag agt	1145
Glu Gly Pro Lys Gly Val Asp Glu Gln Ser Asp Ser Ser Glu Glu Ser	
296 301 306 311	
gag gag gag aag ccg cct gag gag gac aag gag gag gag gag gag aag	1193
Glu Glu Glu Lys Pro Pro Glu Glu Asp Lys Glu Glu Glu Glu Glu Lys	
312 317 322 327	
aag gca ccc acc ccg cag gag aag aag cgc agg aaa gac agc agc gag	1241
Lys Ala Pro Thr Pro Gln Glu Lys Lys Arg Arg Lys Asp Ser Ser Glu	
328 333 338 343	
gag tcg gac agc tca gag gag agc gac att gac agc gag gcc tcc tca	1289
Glu Ser Asp Ser Ser Glu Glu Ser Asp Ile Asp Ser Glu Ala Ser Ser	
344 349 354 359	
gcc ctc ttc atg gcg aag aag aag acg cca ccc aag aga gag cgg aag	1337
Ala Leu Phe Met Ala Lys Lys Lys Thr Pro Pro Lys Arg Glu Arg Lys	
360 365 370 375	
ccg tcg gga ggg agc tca agg ggc aac agc cgc cca ggc acg ccc agc	1385
Pro Ser Gly Gly Ser Ser Arg Gly Asn Ser Arg Pro Gly Thr Pro Ser	
376 381 386 391	
gca gag ggt ggc agc acc tcc tcc acc ctg cgg gcg gct gcc agc aaa	1433
Ala Glu Gly Gly Ser Thr Ser Ser Thr Leu Arg Ala Ala Ala Ser Lys	
392 397 402 407	
ctc gag caa ggg aag cgg gtg agc gag atg cct gca gcc aag cgg ttg	1481
Leu Glu Gln Gly Lys Arg Val Ser Glu Met Pro Ala Ala Lys Arg Leu	
408 413 418 423	

cgg ctg gac acg gga ccc cag agc ctg tct ggg aag tcg aca ccc cag	1529
Arg Leu Asp Thr Gly Pro Gln Ser Leu Ser Gly Lys Ser Thr Pro Gln	
424 429 434 439	
cca cca tca ggc aag aca aca ccc aac agc ggc gac gtg cag gtg act	1577
Pro Pro Ser Gly Lys Thr Thr Pro Asn Ser Gly Asp Val Gln Val Thr	
440 445 450 455	
gag gat gcc gtg cgc cgc tac ctg aca cgg aag ccc atg acc act aag	1625
Glu Asp Ala Val Arg Arg Tyr Leu Thr Arg Lys Pro Met Thr Thr Lys	
456 461 466 471	
gac ctg ctg aaa aag ttc cag acc aag aag aca ggg ctg agc agc gag	1673
Asp Leu Leu Lys Lys Phe Gln Thr Lys Lys Thr Gly Leu Ser Ser Glu	
472 477 482 487	
cag aca gtg aac gtg ttg gcc cag atc ctc aag cga ctc aac ccc gag	1721
Gln Thr Val Asn Val Leu Ala Gln Ile Leu Lys Arg Leu Asn Pro Glu	
488 493 498 503	
cgc aag atg atc aac gac aaa atg cac ttc tcc ctc aag gag tga ggc	1769
Arg Lys Met Ile Asn Asp Lys Met His Phe Ser Leu Lys Glu *	
504 509 514	
ttggtccaat acatggctct gccccccaga acttaaggct ctactgccc cttegccatc	1829
ctagagtgag gctctgtcca atacatggct ctaccctcca gaacttcagg ctctcagtga	1889
cccttcgaca tctctgttgc tccctgactc ccaggggccc gtagttagca attctggaaa	1949
agttaagcca tctctctctc tggcccttcc ttctggaatc ttcagatgcc tgtttaggct	2009
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	Met Ala Asp Ser	
	1	
cgg gat ccc gcc agc gac cag atg cag cac tgg aag gag cag cgg gcc		162
Arg Asp Pro Ala Ser Asp Gln Met Gln His Trp Lys Glu Gln Arg Ala		
5 10 15 20		
gcg cag aaa gct gat gtc ctg acc act gga gct ggt aac cca gta gga		210
Ala Gln Lys Ala Asp Val Leu Thr Thr Gly Ala Gly Asn Pro Val Gly		
21 26 31 36		
gac aaa ctt aat gtt att aca gta ggg ccc cgt ggg ccc ctt ctt gtt		258
Asp Lys Leu Asn Val Ile Thr Val Gly Pro Arg Gly Pro Leu Leu Val		
37 42 47 52		
cag gat gtg gtt ttc act gat gaa atg gct cat ttt gac cga gag aga		306
Gln Asp Val Val Phe Thr Asp Glu Met Ala His Phe Asp Arg Glu Arg		
53 58 63 68		
att cct gag aga gtt gtg cat gct aaa gga gca ggg gcc ttt ggc tac		354
Ile Pro Glu Arg Val Val His Ala Lys Gly Ala Gly Ala Phe Gly Tyr		
69 74 79 84		
ttt gag gtc aca cat gac att acc aaa tac tcc aag gca aag gta ttt		402
Phe Glu Val Thr His Asp Ile Thr Lys Tyr Ser Lys Ala Lys Val Phe		
85 90 95 100		
gag cat att gga aag aag act ccc atc gca gtt cgg ttc tcc act gtt		450
Glu His Ile Gly Lys Lys Thr Pro Ile Ala Val Arg Phe Ser Thr Val		
101 106 111 116		
gct gga gaa tcg ggt tca gct gac aca gtt cgg gac cct cgt ggg ttt		498
Ala Gly Glu Ser Gly Ser Ala Asp Thr Val Arg Asp Pro Arg Gly Phe		
117 122 127 132		
gca gtg aaa ttt tac aca gaa gat ggt aac tgg gat ctc gtt gga aat		546
Ala Val Lys Phe Tyr Thr Glu Asp Gly Asn Trp Asp Leu Val Gly Asn		
133 138 143 148		
aac acc ccc att ttc ttc atc agg gat ccc ata ttg ttt cca tct ttt		594
Asn Thr Pro Ile Phe Phe Ile Arg Asp Pro Ile Leu Phe Pro Ser Phe		
149 154 159 164		
atc cac agc caa aag aga aat cct cag aca cat ctg aag gat ccg gac		642
Ile His Ser Gln Lys Arg Asn Pro Gln Thr His Leu Lys Asp Pro Asp		
165 170 175 180		
atg gtc tgg gac ttc tgg agc cta cgt cct gag tct ctg cat cag gtt		690
Met Val Trp Asp Phe Trp Ser Leu Arg Pro Glu Ser Leu His Gln Val		
181 186 191 196		
tct ttc ttg ttc agt gat cgg ggg att cca gat gga cat cgc cac atg		738
Ser Phe Leu Phe Ser Asp Arg Gly Ile Pro Asp Gly His Arg His Met		/
197 202 207 212		
aat gga tat gga tca cat act ttc aag ctg gtt aat gca aat ggg gag		786

437	442	447	452	
gag gaa cag agg aaa cgt ctg tgt gag aac att gcc ggc cac ctg aag				1506
Glu Glu Gln Arg Lys Arg Leu Cys Glu Asn Ile Ala Gly His Leu Lys				
453	458	463	468	
gat gca caa att ttc atc cag aag aaa gcg gtc aag aac ttc act gag				1554
Asp Ala Gln Ile Phe Ile Gln Lys Lys Ala Val Lys Asn Phe Thr Glu				
469	474	479	484	
gtc cac cct gac tac ggg agc cac atc cag gct ctt ctg gac aag tac				1602
Val His Pro Asp Tyr Gly Ser His Ile Gln Ala Leu Leu Asp Lys Tyr				
485	490	495	500	
aat gct gag aag cct aag aat gcg att cac acc ttt gtg cag tcc gga				1650
Asn Ala Glu Lys Pro Lys Asn Ala Ile His Thr Phe Val Gln Ser Gly				
501	506	511	516	
tct cac ttg gcg gca agg gag aag gca aat ctg tga ggcc ggggccctgc				1700
Ser His Leu Ala Ala Arg Glu Lys Ala Asn Leu *				
517	522	527		
acctgtgcag cgaagcttag cgttcacccg tgtaaccgc tcatcactgg atgaagattc				1760
tcctgtgcta gatgtgcaaa tgcaagctag tggcttcaaa atagagaatc ccactttcta				1820
tagcagattg tgtaacaatt ttaatgctat ttccccaggg gaaaatgaag gttaggattt				1880
aacagtcatt taaaaaaaaa atttgttttg acggatgatt ggattattca tttaaaatga				1940
ttagaaggca agtttctagc tagaaatatg attttatttg acaaaatttg ttgaaattat				2000
gtatgtttac atatcacctc atggcctatt atattaaaat atggctataa atatataaaa				2060
agaaaagata aagatgatct actcagaaat ttttattttt ctaaggttct cataggaaaa				2120
gtacatttaa tacagcagtg tcatcagaag ataacttgag caccgtcatg gcttaatgtt				2180
tattcctgat aataattgat caaattcatt tttttcactg gagttacatt aatgttaatt				2240
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gtacgtaaaa aaaaaaaaaa				2318

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Met Pro Leu	
1	
tca gga acc ccg gcc cct aat aag aag agg aaa tcc agc aag ctg atc	163
Ser Gly Thr Pro Ala Pro Asn Lys Lys Arg Lys Ser Ser Lys Leu Ile	
4 9 14 19	
atg gaa ctc act gga ggt gga cag gag agc tca ggc ttg aac ctg ggc	211
Met Glu Leu Thr Gly Gly Gly Gln Glu Ser Ser Gly Leu Asn Leu Gly	
20 25 30 35	
aaa aag atc agt gtc cca agg gat gtg atg ttg gag gaa ctg tcg ctg	259
Lys Lys Ile Ser Val Pro Arg Asp Val Met Leu Glu Glu Leu Ser Leu	
36 41 46 51	
ctt acc aac cgg ggc tcc aag atg ttc aaa ctg cgg cag atg agg gtg	307
Leu Thr Asn Arg Gly Ser Lys Met Phe Lys Leu Arg Gln Met Arg Val	
52 57 62 67	
gag aag ttt att tat gag aac cac cct gat gtt ttc tct gac agc tca	355
Glu Lys Phe Ile Tyr Glu Asn His Pro Asp Val Phe Ser Asp Ser Ser	
68 73 78 83	
atg gat cac ttc cag aag ttc ctt cca aca gtg ggg gga cag ctg ggc	403
Met Asp His Phe Gln Lys Phe Leu Pro Thr Val Gly Gly Gln Leu Gly	
84 89 94 99	
aca gct ggt cag gga ttc tca tac agc aag agc aac ggc aga ggc ggc	451
Thr Ala Gly Gln Gly Phe Ser Tyr Ser Lys Ser Asn Gly Arg Gly Gly	
100 105 110 115	
agc cag gca ggg ggc agt ggc tct gcc gga cag tat ggc tct gat cag	499
Ser Gln Ala Gly Gly Ser Gly Ser Ala Gly Gln Tyr Gly Ser Asp Gln	
116 121 126 131	
cag cac cat ctg ggc tct ggg tct gga gct ggg ggt aca ggt ggt ccc	547
Gln His His Leu Gly Ser Gly Ser Gly Ala Gly Gly Thr Gly Gly Pro	
132 137 142 147	
gcg ggc cag gct ggc aga gga gga gct gct ggc aca gca ggg gtt ggt	595
Ala Gly Gln Ala Gly Arg Gly Gly Ala Ala Gly Thr Ala Gly Val Gly	
148 153 158 163	
gag aca gga tca gga gac cag gca ggc gga gaa gga aaa cat atc act	643
Glu Thr Gly Ser Gly Asp Gln Ala Gly Gly Glu Gly Lys His Ile Thr	
164 169 174 179	
gtg ttc aag acc tat att tcc cca tgg gag cga gcc atg ggg gtt gac	691
Val Phe Lys Thr Tyr Ile Ser Pro Trp Glu Arg Ala Met Gly Val Asp	
180 185 190 195	
ccc cag caa aaa atg gaa ctt ggc att gac ctg ctg gcc tat ggg gcc	739
Pro Gln Gln Lys Met Glu Leu Gly Ile Asp Leu Leu Ala Tyr Gly Ala	
196 201 206 211	

aaa gct gaa ctt ccc aaa tat aag tcc ttc aac agg acg gca atg ccc	787
Lys Ala Glu Leu Pro Lys Tyr Lys Ser Phe Asn Arg Thr Ala Met Pro	
212 217 222 227	
tat ggt gga tat gag aag gcc tcc aaa cgc atg acc ttc cag atg ccc	835
Tyr Gly Gly Tyr Glu Lys Ala Ser Lys Arg Met Thr Phe Gln Met Pro	
228 233 238 243	
aag ttt gac ctg ggg ccc ttg ctg agt gaa ccc ctg gtc ctc tac aac	883
Lys Phe Asp Leu Gly Pro Leu Leu Ser Glu Pro Leu Val Leu Tyr Asn	
244 249 254 259	
caa aac ctc tcc aac agg cct tct ttc aat cga acc cct att ccc tgg	931
Gln Asn Leu Ser Asn Arg Pro Ser Phe Asn Arg Thr Pro Ile Pro Trp	
260 265 270 275	
ctg agc tct ggg gag cct gta gac tac aac gtg gat att ggc atc ccc	979
Leu Ser Ser Gly Glu Pro Val Asp Tyr Asn Val Asp Ile Gly Ile Pro	
276 281 286 291	
ttg gat gga gaa aca gag gag ctg tga ggtgt ttcctcctct gatttgcac	1031
Leu Asp Gly Glu Thr Glu Glu Leu *	
292 297	
atttccctc tctggctcca atttggagag ggaatgctga gcagatagcc cccattgtta	1091
atccagtatc cttatgggaa tggagggaaa aaggagagat ctacctttcc atcctttact	1151
ccaagtcccc actccacgca tcttctctca ccaactcaga gctccccctc tacttgctcc	1211
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aca gct ggt tat aag acc ctt ctc aag tgc ctc tca ggt aaa ttc tgc	96
Thr Ala Gly Tyr Lys Thr Leu Leu Lys Cys Leu Ser Gly Lys Phe Cys	
17 22 27 32	
cgc cgg gag ctg att ggc atc atg ggc ccc tca ggg gct ggc aag tct	144

Arg	Arg	Glu	Leu	Ile	Gly	Ile	Met	Gly	Pro	Ser	Gly	Ala	Gly	Lys	Ser		
33					38					43					48		
aca	ttc	atg	aac	atc	ttg	gca	gga	tac	agg	gag	tct	gga	atg	aag	ggg	192	
Thr	Phe	Met	Asn	Ile	Leu	Ala	Gly	Tyr	Arg	Glu	Ser	Gly	Met	Lys	Gly		
49					54					59					64		
cag	atc	ctg	gtt	aat	gga	agg	cca	cgg	gag	ctg	agg	acc	ttc	cgc	aag	240	
Gln	Ile	Leu	Val	Asn	Gly	Arg	Pro	Arg	Glu	Leu	Arg	Thr	Phe	Arg	Lys		
65					70					75					80		
atg	tcc	tgc	tac	atc	atg	caa	gat	gac	atg	ctg	ctg	ccg	cac	ctc	acg	288	
Met	Ser	Cys	Tyr	Ile	Met	Gln	Asp	Asp	Met	Leu	Leu	Pro	His	Leu	Thr		
81					86					91					96		
gtg	ttg	gaa	gcc	atg	atg	gtc	tct	gct	aac	ctg	aag	ctg	agt	gag	aag	336	
Val	Leu	Glu	Ala	Met	Met	Val	Ser	Ala	Asn	Leu	Lys	Leu	Ser	Glu	Lys		
97					102					107					112		
cag	gag	gtg	aag	aag	gag	ctg	gtg	aca	gag	atc	ctg	acg	gca	ctg	ggc	384	
Gln	Glu	Val	Lys	Lys	Glu	Leu	Val	Thr	Glu	Ile	Leu	Thr	Ala	Leu	Gly		
113					118					123					128		
ctg	atg	tgc	tgc	tcc	cac	acg	agg	aca	gcc	ctg	ctc	tct	ggc	ggg	cag	432	
Leu	Met	Ser	Cys	Ser	His	Thr	Arg	Thr	Ala	Leu	Leu	Ser	Gly	Gly	Gln		
129					134					139					144		
agg	aag	cgt	ctg	gcc	atc	gcc	ctg	gag	ctg	gtc	aac	aac	ccg	cct	gtc	480	
Arg	Lys	Arg	Leu	Ala	Ile	Ala	Leu	Glu	Leu	Val	Asn	Asn	Pro	Pro	Val		
145					150					155					160		
atg	ttc	ttt	gat	gag	ccc	acc	agt	ggc	ctg	gat	agc	gcc	tct	tgt	ttc	528	
Met	Phe	Phe	Asp	Glu	Pro	Thr	Ser	Gly	Leu	Asp	Ser	Ala	Ser	Cys	Phe		
161					166					171					176		
caa	gtg	gtg	tcc	ctc	atg	aag	tcc	ctg	gca	cag	ggg	ggc	cgt	acc	atc	576	
Gln	Val	Val	Ser	Leu	Met	Lys	Ser	Leu	Ala	Gln	Gly	Gly	Arg	Thr	Ile		
177					182					187					192		
atc	tgc	acc	atc	cac	cag	ccc	agt	gcc	aag	ctc	ttt	gag	atg	ttt	gac	624	
Ile	Cys	Thr	Ile	His	Gln	Pro	Ser	Ala	Lys	Leu	Phe	Glu	Met	Phe	Asp		
193					198					203					208		
aag	tgc	atc	ttc	aaa	ggc	gtg	gtc	acc	aac	ctg	atc	ccc	tat	cta	aag	672	
Lys	Cys	Ile	Phe	Lys	Gly	Val	Val	Thr	Asn	Leu	Ile	Pro	Tyr	Leu	Lys		
209					214					219					224		
gga	ctc	ggc	ttg	cat	tgc	ccc	acc	tac	cac	aac	ccg	gct	gac	ttc	atc	720	
Gly	Leu	Gly	Leu	His	Cys	Pro	Thr	Tyr	His	Asn	Pro	Ala	Asp	Phe	Ile		
225					230					235					240		
atc	gag	gtg	gcc	tct	ggc	gag	tat	gga	gac	ctg	aac	ccc	atg	ttg	ttc	768	
Ile	Glu	Val	Ala	Ser	Gly	Glu	Tyr	Gly	Asp	Leu	Asn	Pro	Met	Leu	Phe		
241					246					251					256		
agg	gct	gtg	cag	aat	ggg	ctg	tgc	gct	atg	gct	gag	aag	aag	agc	agc	816	
Arg	Ala	Val	Gln	Asn	Gly	Leu	Cys	Ala	Met	Ala	Glu	Lys	Lys	Ser	Ser		

257	262	267	272	
cct gag aag aac gag gtc cct gcc cca tgc cct cct tgt cct ccg gaa				864
Pro Glu Lys Asn Glu Val Pro Ala Pro Cys Pro Pro Cys Pro Pro Glu				
273	278	283	288	
gtg gat ccc att gaa agc cac acc ttt gcc acc agc acc ctc aca cag				912
Val Asp Pro Ile Glu Ser His Thr Phe Ala Thr Ser Thr Leu Thr Gln				
289	294	299	304	
ttc tgc atc ctc ttc aag agg acc ttc ctg tcc atc ctc agg gac acg				960
Phe Cys Ile Leu Phe Lys Arg Thr Phe Leu Ser Ile Leu Arg Asp Thr				
305	310	315	320	
gtg gtg tgt ccg gtg gtc tac tgc agc att gtg tac tgg atg acg ggc				1008
Val Val Cys Pro Val Val Tyr Cys Ser Ile Val Tyr Trp Met Thr Gly				
321	326	331	336	
cag ccc gct gag acc agc cgc ttc ctg ctc ttc tca gcc ctg gcc acc				1056
Gln Pro Ala Glu Thr Ser Arg Phe Leu Leu Phe Ser Ala Leu Ala Thr				
337	342	347	352	
gcc acc gcc ttg gtg gcc caa tct ttg ggg ctg ctg atc gga gct gct				1104
Ala Thr Ala Leu Val Ala Gln Ser Leu Gly Leu Leu Ile Gly Ala Ala				
353	358	363	368	
tcc aac tcc cta cag gtg gcc act ttt gtg ggc cca gtt acc gcc atc				1152
Ser Asn Ser Leu Gln Val Ala Thr Phe Val Gly Pro Val Thr Ala Ile				
369	374	379	384	
cct gtc ctc ttg ttc tcc ggc ttc ttt gtc agc ttc aag acc atc ccc				1200
Pro Val Leu Leu Phe Ser Gly Phe Phe Val Ser Phe Lys Thr Ile Pro				
385	390	395	400	
act tac ctg caa tgg agc tcc tat ctc tcc tat gtc agg tat ggc ttt				1248
Thr Tyr Leu Gln Trp Ser Ser Tyr Leu Ser Tyr Val Arg Tyr Gly Phe				
401	406	411	416	
gag ggt gtg atc ctg acg atc tat ggc atg gag cga gga gac ctg aca				1296
Glu Gly Val Ile Leu Thr Ile Tyr Gly Met Glu Arg Gly Asp Leu Thr				
417	422	427	432	
tgt tta gag gaa cgc tgc ccg ttc cgg gag cca cag agc atc ctc cga				1344
Cys Leu Glu Glu Arg Cys Pro Phe Arg Glu Pro Gln Ser Ile Leu Arg				
433	438	443	448	
gcg ctg gat gtg gag gat gcc aag ctc tac atg gac ttc ctg gtc ttg				1392
Ala Leu Asp Val Glu Asp Ala Lys Leu Tyr Met Asp Phe Leu Val Leu				
449	454	459	464	
ggc atc ttc ttc cta gcc ctg cgg ctg ctg gcc tac ctt gtg ctg cgt				1440
Gly Ile Phe Phe Leu Ala Leu Arg Leu Leu Ala Tyr Leu Val Leu Arg				
465	470	475	480	
tac cgg/gaa tgt ggc ttt tgt tct ctg gac agt tct gct gac ctc atc				1488
Tyr Arg Glu Cys Gly Phe Cys Ser Leu Asp Ser Ser Ala Asp Leu Ile				
481	486	491	496	

cgc cat gtc tac ttc cac tgc tac cac acc aag ctg aaa cag tgg ggg	1536
Arg His Val Tyr Phe His Cys Tyr His Thr Lys Leu Lys Gln Trp Gly	
497 502 507 512	
ctg cag gcc ttg caa agc cag gct gac ctt ggc ccc tgc atc ctg gac	1584
Leu Gln Ala Leu Gln Ser Gln Ala Asp Leu Gly Pro Cys Ile Leu Asp	
513 518 523 528	
ttc cag agc cgg aac gtc atc cct gat atc cct gac cac ttc ctg tgt	1632
Phe Gln Ser Arg Asn Val Ile Pro Asp Ile Pro Asp His Phe Leu Cys	
529 534 539 544	
ctg tgg gag cac tgt gag ttg ccc ctg gca cag aat tcc ttc gac aat	1680
Leu Trp Glu His Cys Glu Leu Pro Leu Ala Gln Asn Ser Phe Asp Asn	
545 550 555 560	
cct gag tgg ttt tat cgg cat gtg gaa gca cac agt ctg tgc tgt gaa	1728
Pro Glu Trp Phe Tyr Arg His Val Glu Ala His Ser Leu Cys Cys Glu	
561 566 571 576	
tac gaa gca gtc ggc aag gac aac ccg gtg gtg ctg tgt ggc tgg aaa	1776
Tyr Glu Ala Val Gly Lys Asp Asn Pro Val Val Leu Cys Gly Trp Lys	
577 582 587 592	
ggc tgt acc tgc acc ttc aag gac cgc agt aaa ctt cga gag cac ctc	1824
Gly Cys Thr Cys Thr Phe Lys Asp Arg Ser Lys Leu Arg Glu His Leu	
593 598 603 608	
cgc agc cat acc cag gag aaa gtg gta gcc tgc ccc acc tgt ggg ggc	1872
Arg Ser His Thr Gln Glu Lys Val Val Ala Cys Pro Thr Cys Gly Gly	
609 614 619 624	
atg ttt gcc aac aat acc aag ttc tta gat cac atc cgt cgc cag acc	1920
Met Phe Ala Asn Asn Thr Lys Phe Leu Asp His Ile Arg Arg Gln Thr	
625 630 635 640	
tca ttg gat cag cag cac ttc cag tgt tct cac tgt tcc aag aga ttt	1968
Ser Leu Asp Gln Gln His Phe Gln Cys Ser His Cys Ser Lys Arg Phe	
641 646 651 656	
gcc aca gag cgg cta ttg cgg gac cac atg cgc aac cat gtg aat cac	2016
Ala Thr Glu Arg Leu Leu Arg Asp His Met Arg Asn His Val Asn His	
657 662 667 672	
tat aag tgc cct ctg tgt gac atg acc tgc ccg ctg cct tcc tcc ctc	2064
Tyr Lys Cys Pro Leu Cys Asp Met Thr Cys Pro Leu Pro Ser Ser Leu	
673 678 683 688	
cgc aac cac atg cgc ttt cgt cac agt gag gac cgg ccc ttt aaa tgt	2112
Arg Asn His Met Arg Phe Arg His Ser Glu Asp Arg Pro Phe Lys Cys	
689 694 699 704	
gac tgt tgt gac tac agc tgc aag aat ctt att gac ctc cag aag cac	2160
Asp Cys Cys Asp Tyr Ser Cys Lys Asn Leu Ile Asp Leu Gln Lys His	
705 710 715 720	

ctg gat acc cac agc gag gag cca gcc tac agg tgt gat ttt gag aac	2208
Leu Asp Thr His Ser Glu Glu Pro Ala Tyr Arg Cys Asp Phe Glu Asn	
721 726 731 736	
tgc acc ttc agt gcc cga tcc ctc tgc tct atc aag tcc cat tac cgc	2256
Cys Thr Phe Ser Ala Arg Ser Leu Cys Ser Ile Lys Ser His Tyr Arg	
737 742 747 752	
aaa gta cat gaa gga gac tct gag cca agg tac aaa tgt cat gtg tgt	2304
Lys Val His Glu Gly Asp Ser Glu Pro Arg Tyr Lys Cys His Val Cys	
753 758 763 768	
gac aaa tgc ttc aca cgg ggc aac aac ctc acc gtg cac ctt cgc aag	2352
Asp Lys Cys Phe Thr Arg Gly Asn Asn Leu Thr Val His Leu Arg Lys	
769 774 779 784	
aag cac cag ttc aag tgg ccc tca ggg cat ccc cgt ttt cgg tac aag	2400
Lys His Gln Phe Lys Trp Pro Ser Gly His Pro Arg Phe Arg Tyr Lys	
785 790 795 800	
gaa cat gaa gat ggc tat atg cgg ctg cag ctg gtt cgc tac gag agt	2448
Glu His Glu Asp Gly Tyr Met Arg Leu Gln Leu Val Arg Tyr Glu Ser	
801 806 811 816	
gta gag ctg aca cag caa ctg ctg cgg caa cca caa gag gga tgc ggc	2496
Val Glu Leu Thr Gln Gln Leu Leu Arg Gln Pro Gln Glu Gly Ser Gly	
817 822 827 832	
ctg gga acg tgc ctg aac gag agc agc ctg cag ggc att att cta gaa	2544
Leu Gly Thr Ser Leu Asn Glu Ser Ser Leu Gln Gly Ile Ile Leu Glu	
833 838 843 848	
aca gtg cca ggg gag cca gga cgt aag gaa gag gaa gag gag ggc aag	2592
Thr Val Pro Gly Glu Pro Gly Arg Lys Glu Glu Glu Glu Glu Gly Lys	
849 854 859 864	
ggt agc gaa ggg aca gcc ctc tca gcc tct cag gac aac ccc agt tct	2640
Gly Ser Glu Gly Thr Ala Leu Ser Ala Ser Gln Asp Asn Pro Ser Ser	
865 870 875 880	
gtc atc cac gtg gtg aat cag acc aat gcc caa ggc cag caa gag att	2688
Val Ile His Val Val Asn Gln Thr Asn Ala Gln Gly Gln Gln Glu Ile	
881 886 891 896	
gtc tac tat gtg ctg tct gaa gcc cca ggg gag cct ccc cca gtc cct	2736
Val Tyr Tyr Val Leu Ser Glu Ala Pro Gly Glu Pro Pro Pro Val Pro	
897 902 907 912	
gag cca cct tca ggg ggc atc atg gaa aag ctt caa gga ata gct gag	2784
Glu Pro Pro Ser Gly Gly Ile Met Glu Lys Leu Gln Gly Ile Ala Glu	
913 918 923 928	
gag cca gag atc cag atg gtt tga aggccgcaga gccagaccat ttcttcccca	2838
Glu Pro Glu Ile Gln Met Val *	/
929 934	
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tacaaccca aggactttca tgattatcct cagggacagg attggaggca ttgagcgtgt 3318
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ccttcttggg agaggcgggt tccctccctc ggcaag atg ccg gag tgc tgg gat 174
Met Pro Glu Cys Trp Asp
1

ggg gaa cat gac atc gag aca ccc tac ggc ctt ctg cat gta gtg atc 222
Gly Glu His Asp Ile Glu Thr Pro Tyr Gly Leu Leu His Val Val Ile
7 12 17 22

cgg ggc tcc ccc aag ggg aac cgc cca gcc atc ctc acc tac cat gat 270
Arg Gly Ser Pro Lys Gly Asn Arg Pro Ala Ile Leu Thr Tyr His Asp
23 28 33 38

gtg ggc ctc aac cac aaa cta tgc ttc aac acc ttc ttc aac ttc gag 318
Val Gly Leu Asn His Lys Leu Cys Phe Asn Thr Phe Phe Asn Phe Glu
39 44 49 54

gac atg cag gag atc acc aag cac ttt gtg gtg tgt cac gtg gat gcc 366
Asp Met Gln Glu Ile Thr Lys His Phe Val Val Cys His Val Asp Ala
55 60 65 70

cct gga caa cag gtg ggg gcg tgc cag ttt cct cag ggg tac cag ttc 414
Pro Gly Gln Gln Val Gly Ala Ser Gln Phe Pro Gln Gly Tyr Gln Phe
71 76 81 86

ccc tcc atg gag cag ctg gct gcc atg ctc	ccc agc gtg gtg cag cat	462
Pro Ser Met Glu Gln Leu Ala Ala Met Leu	Pro Ser Val Val Gln His	
87	92 97 102	
ttc ggg ttc aag tat gtg att ggc atc gga	gtg ggc gcc gga gcc tat	510
Phe Gly Phe Lys Tyr Val Ile Gly Ile Gly	Val Gly Ala Gly Ala Tyr	
103	108 113 118	
gtg ctg gcc aag ttt gca ctc atc ttc ccc	gac ctg gtg gag ggg ctg	558
Val Leu Ala Lys Phe Ala Leu Ile Phe Pro	Asp Leu Val Glu Gly Leu	
119	124 129 134	
gtg ctg gtg aac atc gac ccc aat ggc aaa	ggc tgg ata gac tgg gct	606
Val Leu Val Asn Ile Asp Pro Asn Gly Lys	Gly Trp Ile Asp Trp Ala	
135	140 145 150	
gcc acc aag ctc tcc ggc cta act agc act	tta ccc gac acg gtg ctc	654
Ala Thr Lys Leu Ser Gly Leu Thr Ser Thr	Leu Pro Asp Thr Val Leu	
151	156 161 166	
tcc cac ctc ttc agc cag gag gag ctg gtg	aac aac aca gag ttg gtg	702
Ser His Leu Phe Ser Gln Glu Glu Leu Val	Asn Asn Thr Glu Leu Val	
167	172 177 182	
cag agc tac cgg cag cag att ggg aac gta	gtg aac cag gcc aac ctg	750
Gln Ser Tyr Arg Gln Gln Ile Gly Asn Val	Val Asn Gln Ala Asn Leu	
183	188 193 198	
cag ctc ttc tgg aac atg tac aac agc cgc	aga gac ctg gac att aac	798
Gln Leu Phe Trp Asn Met Tyr Asn Ser Arg	Arg Asp Leu Asp Ile Asn	
199	204 209 214	
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Arg Pro Gly Thr Val Pro Asn Ala Lys Thr	Leu Arg Cys Pro Val Met	
215	220 225 230	
ctg gtg gtt ggg gat aat gca ccc gct gag	gac ggg gtg gtg gag tgc	894
Leu Val Val Gly Asp Asn Ala Pro Ala Glu	Asp Gly Val Val Glu Cys	
231	236 241 246	
aac tcc aaa ctg gac ccg acc act acg acc	ttc ctg aag atg gca gac	942
Asn Ser Lys Leu Asp Pro Thr Thr Thr Thr	Phe Leu Lys Met Ala Asp	
247	252 257 262	
tct gga ggg ctg ccc cag gtc aca cag cca	ggg aag ctg act gaa gcc	990
Ser Gly Gly Leu Pro Gln Val Thr Gln Pro	Gly Lys Leu Thr Glu Ala	
263	268 273 278	
ttc aaa tac ttc ctg caa ggc atg ggc tac	atg ccc tca gcc agc atg	1038
Phe Lys Tyr Phe Leu Gln Gly Met Gly Tyr	Met Pro Ser Ala Ser Met	
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acc cgc ctg gca cgc tcc cgc act gca tcc	ctc acc agt gcc agc tcg	1086
Thr Arg Leu Ala Arg Ser Arg Thr Ala Ser	Leu Thr Ser Ala Ser Ser	
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Val Asp Gly Ser Arg Pro Gln Ala Cys Thr His Ser Glu Ser Ser Glu	
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Gly Leu Gly Gln Val Asn His Thr Met Glu Val Ser Cys *	
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    Met Ala Gln Ala Leu Ser Glu Glu Glu Phe Gln Arg Met Gln Ala
      1             5             10

cag ctc ctg gaa ctc cgg aca aac aac tac cag ctt tca gat gaa cta 155
Gln Leu Leu Glu Leu Arg Thr Asn Asn Tyr Gln Leu Ser Asp Glu Leu
  16             21             26             31

cgc aag aat ggt gtt gaa ctc acc agt ctt cga cag aag gtc gcc tac 203
Arg Lys Asn Gly Val Glu Leu Thr Ser Leu Arg Gln Lys Val Ala Tyr
  32             37             42             47

ttg gat aag gag ttc agc aaa gct cag aag gca ctg agc aag agc aag 251
Leu Asp Lys Glu Phe Ser Lys Ala Gln Lys Ala Leu Ser Lys Ser Lys
  48             53             58             63

aaa gct cag gaa gtc gag gta ttg ctg agt gaa aat gag atg ctg cag 299
Lys Ala Gln Glu Val Glu Val Leu Leu Ser Glu Asn Glu Met Leu Gln
  64             69             74             79

gca aag ctg cac agc cag gag gag gac ttc cgt ttg cag aac agc aca 347

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Ala	Lys	Leu	His	Ser	Gln	Glu	Glu	Asp	Phe	Arg	Leu	Gln	Asn	Ser	Thr		
80					85					90					95		

cta atg gcc gag ttc agc aag gtg ctg gtg cct ggg ata gtc aaa ggg	395
Leu Met Ala Glu Phe Ser Lys Val Leu Val Pro Gly Ile Val Lys Gly	
96 101 106 111	

gaa atg agg ggt agg ggt cat ctg ggc tga a acctaacagc ggcagagagt	446
Glu Met Arg Gly Arg Gly His Leu Gly *	
112 117	

gattggacag ggtctggccc tggagcactg tccgtggtgc tgaaacaggt cctggattgc	506
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ccaaaccatg tgcagctgga agaagtggta gaggctgaag aaccgcctg ccacggtgct	600
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cagtagctgc tggaaaaatt cctggcggct aaaggtggcc attgcagacc cccacgg	777
atg gat ggc cag atg gat aga tct ggc agg aaa gaa gcc gtg gtc ctg	825
Met Asp Gly Gln Met Asp Arg Ser Gly Arg Lys Glu Ala Val Val Leu	

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ggg acc gag gac gcg ctg ccg ccg ccg ctg cct cct ccg ggc agc ctc				873
Gly Thr Glu Asp Ala Leu Pro Pro Pro Leu Pro Pro Pro Gly Ser Leu				
17	22	27	32	
tac cac ttc ttc cag ctg cac atg gtt tgg gtc gtg ctg ctc agc ctc				921
Tyr His Phe Phe Gln Leu His Met Val Trp Val Val Leu Leu Ser Leu				
33	38	43	48	
ctg tgc tac ctc gtg ctg ttc ctc tgc cga cat tcc tcc cat cga ggc				969
Leu Cys Tyr Leu Val Leu Phe Leu Cys Arg His Ser Ser His Arg Gly				
49	54	59	64	
gtc ttc cta tcc gtc acc atc ctc atc tac cta ctc atg ggt gag atg				1017
Val Phe Leu Ser Val Thr Ile Leu Ile Tyr Leu Leu Met Gly Glu Met				
65	70	75	80	
cac atg gta gac acc gtg aca tgg cac aag atg cga ggg gca cag atg				1065
His Met Val Asp Thr Val Thr Trp His Lys Met Arg Gly Ala Gln Met				
81	86	91	96	
att gtg gcc atg aag gca gtg tct ctg ggc ttc gac ctg gac cgg ggc				1113
Ile Val Ala Met Lys Ala Val Ser Leu Gly Phe Asp Leu Asp Arg Gly				
97	102	107	112	
gag gtg ggt acg gtg ccc tgc cca gtg gag ttc atg ggc tac ctc tac				1161
Glu Val Gly Thr Val Pro Ser Pro Val Glu Phe Met Gly Tyr Leu Tyr				
113	118	123	128	
ttc gtg ggc acc atc gtc ttc ggg ccc tgg ata tcc ttc cac agc tac				1209
Phe Val Gly Thr Ile Val Phe Gly Pro Trp Ile Ser Phe His Ser Tyr				
129	134	139	144	
cta caa gct gtc caa ggc cgc cca ctg agc tgc cgg tgg ctg cag aag				1257
Leu Gln Ala Val Gln Gly Arg Pro Leu Ser Cys Arg Trp Leu Gln Lys				
145	150	155	160	
gtg gcc cgg agc ctg gca ctg gcc ctg ctg tgc ctt gtg ctg tcc act				1305
Val Ala Arg Ser Leu Ala Leu Ala Leu Leu Cys Leu Val Leu Ser Thr				
161	166	171	176	
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Cys Val Gly Pro Tyr Leu Phe Pro Tyr Phe Ile Pro Leu Asn Gly Asp				
177	182	187	192	
cgc ctc ctt cgc aac aag aaa cgc aaa gcc agg ggc acc atg gta agg				1401
Arg Leu Leu Arg Asn Lys Lys Arg Lys Ala Arg Gly Thr Met Val Arg				
193	198	203	208	
tgg ctg cga gcc tac gag agt gct gtc tcc ttc cac ttc agc aac tat				1449
Trp Leu Arg Ala Tyr Glu Ser Ala Val Ser Phe His Phe Ser Asn Tyr				
209	214	219	224	
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Phe Val Gly Phe Leu Ser Glu Ala Thr Ala Thr Leu Ala Gly Ala Gly				
225	230	235	240	

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Phe Thr Glu Glu Lys Asp His Leu Glu Trp Asp Leu Thr Val Ser Lys	
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cca ctg aat gtg gag ctg cct cgg tca atg gtg gaa gtt gtc aca agc	1593
Pro Leu Asn Val Glu Leu Pro Arg Ser Met Val Glu Val Val Thr Ser	
257 262 267 272	
tgg aac ctg ccc atg tct tat tgg cta aat aac tat gtt ttc aag aat	1641
Trp Asn Leu Pro Met Ser Tyr Trp Leu Asn Asn Tyr Val Phe Lys Asn	
273 278 283 288	
gct ctc cgc ctg ggg acc ttc tcg gct gtg ctg gtc acc tat gca gcc	1689
Ala Leu Arg Leu Gly Thr Phe Ser Ala Val Leu Val Thr Tyr Ala Ala	
289 294 299 304	
agc gcc ctc cta cat ggc ttc agt ttc cac ctg gct gcg gtc ctg ctg	1737
Ser Ala Leu Leu His Gly Phe Ser Phe His Leu Ala Ala Val Leu Leu	
305 310 315 320	
tcc ctg gct ttt atc act tac gtg gag cat gtc ctc cgg aag cgc ctg	1785
Ser Leu Ala Phe Ile Thr Tyr Val Glu His Val Leu Arg Lys Arg Leu	
321 326 331 336	
gct cgg atc ctc agt gcc tgt gtc ttg tca aag cgg tgc ccg cca gac	1833
Ala Arg Ile Leu Ser Ala Cys Val Leu Ser Lys Arg Cys Pro Pro Asp	
337 342 347 352	
tgt tcg cac cag cat cgc ttg ggc ctg ggg gtg cga gcc tta aac ttg	1881
Cys Ser His Gln His Arg Leu Gly Leu Gly Val Arg Ala Leu Asn Leu	
353 358 363 368	
ctc ttt gga gct ctg gcc atc ttc cac ctg gcc tac ctg ggc tcc ctg	1929
Leu Phe Gly Ala Leu Ala Ile Phe His Leu Ala Tyr Leu Gly Ser Leu	
369 374 379 384	
ttt gat gtc gat gtg gat gac acc aca gag gag cag ggc tac ggc atg	1977
Phe Asp Val Asp Val Asp Asp Thr Thr Glu Glu Gln Gly Tyr Gly Met	
385 390 395 400	
gca tac act gtc cac aag tgg tca gag ctc agc tgg gcc agt cac tgg	2025
Ala Tyr Thr Val His Lys Trp Ser Glu Leu Ser Trp Ala Ser His Trp	
401 406 411 416	
gtc act ttt gga tgc tgg atc ttc tac cgt ctc ata ggc tga gggttac	2074
Val Thr Phe Gly Cys Trp Ile Phe Tyr Arg Leu Ile Gly *	
417 422 427	
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 Met Phe Cys His Arg Asp Glu Tyr Phe Arg Gln Leu Leu
 1 5 10
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 Arg Gly Ala Glu Ser Pro Thr Arg Asn Ser Lys Leu Asn Arg Gly Ser
 14 19 24 29
 cta agt ttg gat gat ttt cgg aac aca cag aaa agg gga gaa tca ttt 205
 Leu Ser Leu Asp Asp Phe Arg Asn Thr Gln Lys Arg Gly Glu Ser Phe
 30 35 40 45
 gga atc agc aga ata ggt agc aaa att aaa gga gta ttc aaa agt acc 253
 Gly Ile Ser Arg Ile Gly Ser Lys Ile Lys Gly Val Phe Lys Ser Thr
 46 51 56 61
 aca atg gag gga gct atg ttg cct aat tat ggt gta gct gaa ggt gaa 301
 Thr Met Glu Gly Ala Met Leu Pro Asn Tyr Gly Val Ala Glu Gly Glu
 62 67 72 77
 gat gat ttt att gaa gaa ggt att gtt gta atg gaa gat gat tct cca 349
 Asp Asp Phe Ile Glu Glu Gly Ile Val Val Met Glu Asp Asp Ser Pro
 78 83 88 93
 gtg gag gct gtg agc aca cct aat act ccc cga aac ctt gct gca tgg 397
 Val Glu Ala Val Ser Thr Pro Asn Thr Pro Arg Asn Leu Ala Ala Trp
 94 99 104 109
 aaa att agc att cca tat gta gac ttt ttt gag gat ccc tcc tct gaa 445
 Lys Ile Ser Ile Pro Tyr Val Asp Phe Phe Glu Asp Pro Ser Ser Glu
 110 115 120 125
 agg aag gag aaa aaa gaa aga att cct gtg ttt tgt att gat gtt gaa 493
 Arg Lys Glu Lys Lys Glu Arg Ile Pro Val Phe Cys Ile Asp Val Glu
 126 131 136 141
 aga aat gat aga aga gca gtt gga cac gag cct gaa cat tgg tct gtc 541
 Arg Asn Asp Arg Arg Ala Val Gly His Glu Pro Glu His Trp Ser Val
 142 147 152 157
 tat aga aga tat ctt gaa ttc tat gta ctt gaa tca aaa cta aca gaa 589
 Tyr Arg Arg Tyr Leu Glu Phe Tyr Val Leu Glu Ser Lys Leu Thr Glu

158	163	168	173	
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Phe His Gly Ala Phe Pro Asp Ala Gln Leu Pro Ser Lys Arg Ile Ile				
174	179	184	189	
ggc ccc aaa aat tat gaa ttc tta aag tca aag agg gaa gag ttc caa				685
Gly Pro Lys Asn Tyr Glu Phe Leu Lys Ser Lys Arg Glu Glu Phe Gln				
190	195	200	205	
gaa tat cta cag aaa ctt ctg cag cat cca gaa ctg agt aat agt caa				733
Glu Tyr Leu Gln Lys Leu Leu Gln His Pro Glu Leu Ser Asn Ser Gln				
206	211	216	221	
ctt ctg gca gac ttt ctt tcc cct aat ggt ggg gaa aca caa ttt ctt				781
Leu Leu Ala Asp Phe Leu Ser Pro Asn Gly Gly Glu Thr Gln Phe Leu				
222	227	232	237	
gat aag ata cta cca gat gta aat ctt ggg aaa att ata aaa tct gtt				829
Asp Lys Ile Leu Pro Asp Val Asn Leu Gly Lys Ile Ile Lys Ser Val				
238	243	248	253	
cct gga aaa cta atg aaa gag aaa ggt cag cat ttg gaa cct ttt atc				877
Pro Gly Lys Leu Met Lys Glu Lys Gly Gln His Leu Glu Pro Phe Ile				
254	259	264	269	
atg aat ttc att aat tct tgt gag tct cca aag cct aaa cca agt aga				925
Met Asn Phe Ile Asn Ser Cys Glu Ser Pro Lys Pro Lys Pro Ser Arg				
270	275	280	285	
cca gaa ctg acc att ctc agc cct act tca gaa aac aac aag aag ctt				973
Pro Glu Leu Thr Ile Leu Ser Pro Thr Ser Glu Asn Asn Lys Lys Leu				
286	291	296	301	
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Phe Asn Asp Leu Phe Lys Asn Asn Ala Asn Arg Ala Glu Asn Thr Glu				
302	307	312	317	
aga aag caa aat cag aat tat ttt atg gag gtg atg act gta gaa gga				1069
Arg Lys Gln Asn Gln Asn Tyr Phe Met Glu Val Met Thr Val Glu Gly				
318	323	328	333	
gtc tat gat tac ctg atg tat gta gga cgg gta gtt ttc cag gtt cct				1117
Val Tyr Asp Tyr Leu Met Tyr Val Gly Arg Val Val Phe Gln Val Pro				
334	339	344	349	
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Asp Trp Leu His His Leu Leu Met Gly Thr Arg Ile Leu Phe Lys Asn				
350	355	360	365	
acc ctg gaa atg tat act gat tac tat ctt cag tgt aaa cta gaa cag				1213
Thr Leu Glu Met Tyr Thr Asp Tyr Tyr Leu Gln Cys Lys Leu Glu Gln				
366	371	376	381	
cta ttt cag gag cac cgt ttg gtc tca ctc ata aca ctt ctc aga gat				1261
Leu Phe Gln Glu His Arg Leu Val Ser Leu Ile Thr Leu Leu Arg Asp				
382	387	392	397	

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Ala Ile Phe Cys Glu Asn Thr Glu Pro Arg Ser Leu Gln Asp Lys Gln	
398 403 408 413	
aaa gga gca aaa cag act ttt gaa gaa atg atg aat tac att cca gat	1357
Lys Gly Ala Lys Gln Thr Phe Glu Glu Met Met Asn Tyr Ile Pro Asp	
414 419 424 429	
ctg tta gtc aag tgt att ggt gaa gaa acc aag tat gaa agc atc aga	1405
Leu Leu Val Lys Cys Ile Gly Glu Glu Thr Lys Tyr Glu Ser Ile Arg	
430 435 440 445	
ctt ctg ttt gat ggc tta cag caa cca gta ctc aac aag cag ctg act	1453
Leu Leu Phe Asp Gly Leu Gln Gln Pro Val Leu Asn Lys Gln Leu Thr	
446 451 456 461	
tat gtt tta ttg gac att gtg ata cag gaa ctg ttt cca gag ctc aat	1501
Tyr Val Leu Leu Asp Ile Val Ile Gln Glu Leu Phe Pro Glu Leu Asn	
462 467 472 477	
aag gta caa aag gaa gtt acc tct gtg aca tct tgg atg taa acacttg	1550
Lys Val Gln Lys Glu Val Thr Ser Val Thr Ser Trp Met *	
478 483 488	
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ttttgggtat attccttatat atattatgta catcgctgtc tgaaatttta gttatttttt	1670
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Met Phe Cys His Arg Asp Glu Tyr Phe Arg Gln Leu Leu	
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Arg Gly Ala Glu Ser Pro Thr Arg Asn Ser Lys Leu Asn Arg Gly Ser	
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Leu Ser Leu Asp Asp Phe Arg Asn Thr Gln Lys Arg Gly Glu Ser Phe	
30 35 40 45	

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Gly Ile Ser Arg Ile Gly Ser Lys Ile Lys Gly Val Phe Lys Ser Thr	
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Thr Met Glu Gly Ala Met Leu Pro Asn Tyr Gly Val Ala Glu Gly Glu	
62 67 72 77	
gat gat ttt att gaa gaa ggt att gtt gta atg gaa gat gat tct cca	349
Asp Asp Phe Ile Glu Glu Gly Ile Val Val Met Glu Asp Asp Ser Pro	
78 83 88 93	
gtg gag gct gtg agc aca cct aat act ccc cga aac ctt gct gca tgg	397
Val Glu Ala Val Ser Thr Pro Asn Thr Pro Arg Asn Leu Ala Ala Trp	
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aaa att agc att cca tat gta gac ttt ttt gag gat ccc tcc tct gaa	445
Lys Ile Ser Ile Pro Tyr Val Asp Phe Phe Glu Asp Pro Ser Ser Glu	
110 115 120 125	
agg aag gag aaa aaa gaa aga att cct gtg ttt tgt att gat gtt gaa	493
Arg Lys Glu Lys Lys Glu Arg Ile Pro Val Phe Cys Ile Asp Val Glu	
126 131 136 141	
aga aat gat aga aga gca gtt gga cac gag cct gaa cat tgg tct gtc	541
Arg Asn Asp Arg Arg Ala Val Gly His Glu Pro Glu His Trp Ser Val	
142 147 152 157	
tat aga aga tat ctt gaa ttc tat gta ctt gaa tca aaa cta aca gaa	589
Tyr Arg Arg Tyr Leu Glu Phe Tyr Val Leu Glu Ser Lys Leu Thr Glu	
158 163 168 173	
ttt cat ggt gca ttt cct gat gcc cag ctt cct tct aag agg atc att	637
Phe His Gly Ala Phe Pro Asp Ala Gln Leu Pro Ser Lys Arg Ile Ile	
174 179 184 189	
ggc ccc aaa aat tat gaa ttc tta aag tca aag agg gaa gag ttc caa	685
Gly Pro Lys Asn Tyr Glu Phe Leu Lys Ser Lys Arg Glu Glu Phe Gln	
190 195 200 205	
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Glu Tyr Leu Gln Lys Leu Leu Gln His Pro Glu Leu Ser Asn Ser Gln	
206 211 216 221	
ctt ctg gca gac ttt ctt tcc cct aat ggt ggg gaa aca caa ttt ctt	781
Leu Leu Ala Asp Phe Leu Ser Pro Asn Gly Gly Glu Thr Gln Phe Leu	
222 227 232 237	
gat aag ata cta cca gat gta aat ctt ggg aaa att ata aaa tct gtt	829
Asp Lys Ile Leu Pro Asp Val Asn Leu Gly Lys Ile Ile Lys Ser Val	
238 243 248 253	
cct gga aaa cta atg aaa gag aaa ggt cag cat ttg gaa cct ttt atc	877
Pro Gly Lys Leu Met Lys Glu Lys Gly Gln His Leu Glu Pro Phe Ile	
254 259 264 269	

atg aat ttc att aat tct tgt gag tct cca aag cct aaa cca agt aga	925
Met Asn Phe Ile Asn Ser Cys Glu Ser Pro Lys Pro Lys Pro Ser Arg	
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cca gaa ctg acc att ctg agc cct act tca gaa aac aac aag aag ctt	973
Pro Glu Leu Thr Ile Leu Ser Pro Thr Ser Glu Asn Asn Lys Lys Leu	
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Phe Asn Asp Leu Phe Lys Asn Asn Ala Asn Arg Ala Glu Asn Thr Glu	
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aga aag caa aat cag aat tat ttt atg gag gtg atg act gta gaa gga	1069
Arg Lys Gln Asn Gln Asn Tyr Phe Met Glu Val Met Thr Val Glu Gly	
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gtc tat gat tac ctg atg tat gta gat gct ata ttc tgt gaa aac act	1117
Val Tyr Asp Tyr Leu Met Tyr Val Asp Ala Ile Phe Cys Glu Asn Thr	
334 339 344 349	
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Glu Pro Arg Ser Leu Gln Asp Lys Gln Lys Gly Ala Lys Gln Thr Phe	
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Glu Glu Met Met Asn Tyr Ile Pro Asp Leu Leu Val Lys Cys Ile Gly	
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gaa gaa acc aag tat gaa agc atc aga ctt ctg ttt gat ggc tta cag	1261
Glu Glu Thr Lys Tyr Glu Ser Ile Arg Leu Leu Phe Asp Gly Leu Gln	
382 387 392 397	
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Gln Pro Val Leu Asn Lys Gln Leu Thr Tyr Val Leu Leu Asp Ile Val	
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Ile Gln Glu Leu Phe Pro Glu Leu Asn Lys Val Gln Lys Glu Val Thr	
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Ser Val Thr Ser Trp Met *	
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Met Ile Asp Ala Asn Leu	
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Lys Leu Leu Gln Glu Ala Glu Gln Arg Leu Lys Ala Ile Val Ala Glu	
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Lys Phe Ala Ile Ala Thr Lys Glu Gly Asp Leu Pro Gln Val Glu Arg	
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Phe Phe Lys Ile Phe Pro Leu Leu Gly Leu His Glu Glu Gly Leu Arg	
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Lys Phe Ser Glu Tyr Leu Cys Lys Gln Val Ala Ser Lys Ala Glu Glu	
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Asn Leu Leu Met Val Leu Gly Thr Asp Met Ser Asp Arg Arg Ala Ala	
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Val Ile Phe Ala Asp Thr Leu Thr Leu Leu Phe Glu Gly Ile Ala Arg	
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Ile Val Glu Thr His Gln Pro Ile Val Glu Thr Tyr Tyr Gly Pro Gly	
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Val Glu Lys Val Val Asp Lys Phe Ile Lys Gln Arg Asp Tyr His Gln	
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Gln Phe Arg His Val Gln Asn Asn Leu Met Arg Asn Ser Thr Thr Glu	
151 156 161 166	
aaa atc gaa cca aga gaa ctg gac ccc atc ctg act gag gtc acc ctg	641
Lys Ile Glu Pro Arg Glu Leu Asp Pro Ile Leu Thr Glu Val Thr Leu	
167 172 177 182	
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Ser Ser Asp Phe Glu Val Gly Asp Ser Met Ala Ser Glu Glu Val Lys	
199 204 209 214	
caa gag cac cag aag tgt ctg gac aaa ctc ctc aat aac tgc ctt ttg	785
Gln Glu His Gln Lys Cys Leu Asp Lys Leu Leu Asn Asn Cys Leu Leu	
215 220 225 230	
agc tgt acc atg cag gag cta att ggc tta tat gtt acc atg gag gag	833
Ser Cys Thr Met Gln Glu Leu Ile Gly Leu Tyr Val Thr Met Glu Glu	
231 236 241 246	
tac ttc atg agg gag act gtc aat aag gct gtg gct ctg gac acc tat	881
Tyr Phe Met Arg Glu Thr Val Asn Lys Ala Val Ala Leu Asp Thr Tyr	
247 252 257 262	
gag aag ggc cag ctg aca tcc agc atg gtg gat gat gtc ttc tac att	929
Glu Lys Gly Gln Leu Thr Ser Ser Met Val Asp Asp Val Phe Tyr Ile	
263 268 273 278	
gtt aag aag tgc att ggg cgg gct ctg tcc agc tcc agc att gac tgt	977
Val Lys Lys Cys Ile Gly Arg Ala Leu Ser Ser Ser Ser Ile Asp Cys	
279 284 289 294	
ctc tgt gcc atg atc aac ctc gcc acc aca gag ctg gag tct gac ttc	1025
Leu Cys Ala Met Ile Asn Leu Ala Thr Thr Glu Leu Glu Ser Asp Phe	
295 300 305 310	
agg gat gtt ctg tgt aat aag ctg cgg atg ggc ttt cct gcc acc acc	1073
Arg Asp Val Leu Cys Asn Lys Leu Arg Met Gly Phe Pro Ala Thr Thr	
311 316 321 326	
ttc cag gac atc cag cgc ggg gtg aca agt gcc gtg aac atc atg cac	1121
Phe Gln Asp Ile Gln Arg Gly Val Thr Ser Ala Val Asn Ile Met His	
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agc agc ctc cag caa ggc aaa ttt gac aca aaa ggc atc gag agt act	1169
Ser Ser Leu Gln Gln Gly Lys Phe Asp Thr Lys Gly Ile Glu Ser Thr	
343 348 353 358	
gac gag gcg aag atg tcc ttc ctg gtg act ctg aac aac gtg gaa gtc	1217
Asp Glu Ala Lys Met Ser Phe Leu Val Thr Leu Asn Asn Val Glu Val	
359 364 369 374	
tgc agt gaa aac atc tcc act ctg aag aag aca ctg gag agt gac tgc	1265
Cys Ser Glu Asn Ile Ser Thr Leu Lys Lys Thr Leu Glu Ser Asp Cys	
375 380 385 390	
acc aag ctc ttc agc cag ggc att gga ggg gag cag gcc cag gcc aag	1313
Thr Lys Leu Phe Ser Gln Gly Ile Gly Gly Glu Gln Ala Gln Ala Lys	
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Phe Asp Ser Cys Leu Ser Asp Leu Ala Ala Val Ser Asn Lys Phe Arg	

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423	428	433	438	
cca cag gtg cag cct tgg atc aac agc ttt ttc tcc gtc tcc cac aac				1457
Pro Gln Val Gln Pro Trp Ile Asn Ser Phe Phe Ser Val Ser His Asn				
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atc gag gag gaa gaa ttc aat gac tat gag gcc aac gac cct tgg gta				1505
Ile Glu Glu Glu Glu Phe Asn Asp Tyr Glu Ala Asn Asp Pro Trp Val				
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caa cag ttc atc ctt aac ctg gag cag caa atg gca gag ttc aag gcc				1553
Gln Gln Phe Ile Leu Asn Leu Glu Gln Gln Met Ala Glu Phe Lys Ala				
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agc ctg tcc ccg gtc atc tac gac agc cta acc ggc ctc atg act agc				1601
Ser Leu Ser Pro Val Ile Tyr Asp Ser Leu Thr Gly Leu Met Thr Ser				
487	492	497	502	
ctt gtt gcc gtc gag ttg gag aaa gtg gtg ctg aaa tcc acc ttt aac				1649
Leu Val Ala Val Glu Leu Glu Lys Val Val Leu Lys Ser Thr Phe Asn				
503	508	513	518	
cgg ctg ggt ggt ctg cag ttt gac aag gag ctg agg tcg ctc att gcc				1697
Arg Leu Gly Gly Leu Gln Phe Asp Lys Glu Leu Arg Ser Leu Ile Ala				
519	524	529	534	
tac ctt acc acg gtg acc acc tgg acc atc cga gac aag ttt gcc cgg				1745
Tyr Leu Thr Thr Val Thr Thr Trp Thr Ile Arg Asp Lys Phe Ala Arg				
535	540	545	550	
ctc tcc cag atg gcc acc atc ctc aat ctg gag cgg gtg acc gag atc				1793
Leu Ser Gln Met Ala Thr Ile Leu Asn Leu Glu Arg Val Thr Glu Ile				
551	556	561	566	
ctc gat tac tgg gga ccc aat tcc ggc cca ttg acg tgg cgc ctc acc				1841
Leu Asp Tyr Trp Gly Pro Asn Ser Gly Pro Leu Thr Trp Arg Leu Thr				
567	572	577	582	
cct gct gaa gtg cgc cag gtg ctg gcc ctg cgg ata gac ttc cgc agt				1889
Pro Ala Glu Val Arg Gln Val Leu Ala Leu Arg Ile Asp Phe Arg Ser				
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gaa gat atc aag agg ctg cgc ctg tag ctgcc tggatgagca cacctggctc				1941
Glu Asp Ile Lys Arg Leu Arg Leu *				
599	604			
atcacacttg caggcctgtt ccctaagggg cccagccaa ggagctgagc gaggctgtct				2001
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gcggcggcag cggcggcgcc ccgagccggc ggagggcagg ggggggaag atg gcg 295
Met Ala
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gac gtg ctt agc gtc ctg cga cag tac aac atc cag aag aag gag att 343
Asp Val Leu Ser Val Leu Arg Gln Tyr Asn Ile Gln Lys Lys Glu Ile
3 8 13 18
gtg gtg aag gga gac gaa gtg atc ttc ggg gag ttc tcc tgg ccc aag 391
Val Val Lys Gly Asp Glu Val Ile Phe Gly Glu Phe Ser Trp Pro Lys
19 24 29 34
aat gtg aag acc aac tat gtt gtt tgg ggg act gga aag gaa ggc caa 439
Asn Val Lys Thr Asn Tyr Val Val Trp Gly Thr Gly Lys Glu Gly Gln
35 40 45 50
ccc aga gag tac tac aca ttg gat tcc att tta ttt cta ctt aat aac 487
Pro Arg Glu Tyr Tyr Thr Leu Asp Ser Ile Leu Phe Leu Leu Asn Asn
51 56 61 66
gtg cac ctt tct cat cct gtt tat gtc cga cgt gca gct act gaa aat 535
Val His Leu Ser His Pro Val Tyr Val Arg Arg Ala Ala Thr Glu Asn
67 72 77 82
att cct gtg gtt aga aga cct gat cga aaa gat cta ctt gga tat ctc 583
Ile Pro Val Val Arg Arg Pro Asp Arg Lys Asp Leu Leu Gly Tyr Leu
83 88 93 98

aat ggt gaa gcg tca aca tcg gca agt ata gac aga agc gct ccc tta	631
Asn Gly Glu Ala Ser Thr Ser Ala Ser Ile Asp Arg Ser Ala Pro Leu	
99 104 109 114	
gaa ata ggt ctt cag cga tct act caa gtc aaa cga gct gca gat gaa	679
Glu Ile Gly Leu Gln Arg Ser Thr Gln Val Lys Arg Ala Ala Asp Glu	
115 120 125 130	
gtt tta gca gaa gca aag aaa cca cga att gag gat gaa gag tgt gtg	727
Val Leu Ala Glu Ala Lys Lys Pro Arg Ile Glu Asp Glu Glu Cys Val	
131 136 141 146	
cgc ctt gat aaa gag aga ttg gct gcc cgt ttg gag ggt cac aaa gaa	775
Arg Leu Asp Lys Glu Arg Leu Ala Ala Arg Leu Glu Gly His Lys Glu	
147 152 157 162	
ggg att gta cag act gaa cag att agg tct ttg tct gaa gct atg tca	823
Gly Ile Val Gln Thr Glu Gln Ile Arg Ser Leu Ser Glu Ala Met Ser	
163 168 173 178	
gtg gaa aaa att gct gca atc aaa gcc aaa att atg gct aag aaa aga	871
Val Glu Lys Ile Ala Ala Ile Lys Ala Lys Ile Met Ala Lys Lys Arg	
179 184 189 194	
tct act atc aag act gat cta gat gat gac ata act gcc ctt aaa cag	919
Ser Thr Ile Lys Thr Asp Leu Asp Asp Asp Ile Thr Ala Leu Lys Gln	
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Arg Ser Phe Val Asp Ala Glu Val Asp Val Thr Arg Asp Ile Val Ser	
211 216 221 226	
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Arg Glu Arg Val Trp Arg Thr Arg Thr Thr Ile Leu Gln Ser Thr Gly	
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Lys Asn Phe Ser Lys Asn Ile Phe Ala Ile Leu Gln Ser Val Lys Ala	
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Pro Val Asp Pro Thr Leu Arg Thr Lys Gln Pro Ile Pro Ala Ala Tyr	
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Asn Arg Tyr Asp Gln Glu Arg Phe Lys Gly Lys Glu Glu Thr Glu Gly	
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Phe Lys Ile Asp Thr Met Gly Thr Tyr His Gly Met Thr Leu Lys Ser	
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ctc agc tat cac aaa cgt cat ttg gat aga cca gtg ttc tta cgg ttt Leu Ser Tyr His Lys Arg His Leu Asp Arg Pro Val Phe Leu Arg Phe 499 504 509 514	1831
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Glu Glu Arg Tyr Gly Lys Asp Leu Leu Asn Leu Ser Arg Lys Lys Pro
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Cys Gly Gln Ser Glu Ile Asn Thr Leu Lys Arg Ala Leu Glu Val Phe
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Ser Leu Arg Glu Glu Ala Arg Lys Met Glu Glu Phe Arg Glu Lys Gln	
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Lys Leu Gln Arg Lys Lys Thr Glu Leu Ile Met Asp Ala Ile His Lys	
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Gln Lys Ser Leu Gln Phe Lys Lys Thr Met Asp Ala Lys Lys Asn Tyr	
129 134 139 144	
gag cag aaa tgc cgg gac aaa gat gag gca gaa cag gcc gtc agc cgg	537
Glu Gln Lys Cys Arg Asp Lys Asp Glu Ala Glu Gln Ala Val Ser Arg	
145 150 155 160	
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Ser Ala Asn Leu Val Asn Pro Lys Gln Gln Glu Lys Leu Phe Val Lys	
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His Ile Lys Ala Cys Glu Ala Phe Glu Ala Gln Glu Cys Glu Arg Ile	
209 214 219 224	
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Asn Phe Phe Arg Asn Ala Leu Trp Leu His Val Asn Gln Leu Ser Gln	
225 230 235 240	
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241 246 251 256	
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Glu Met Cys Ser Ile Gln Arg Asp Ile Glu Tyr Phe Val Asn Gln Arg	
257 262 267 272	
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Lys Thr Gly Gln Ile Pro Pro Ala Pro Ile Met Tyr Glu Asn Phe Tyr	
273 278 283 288	
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Ser Ser Gln Lys Asn Ala Val Pro Ala Gly Lys Ala Thr Gly Pro Asn	
289 294 299 304	
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Leu Ala Arg Arg Gly Pro Leu Pro Ile Pro Lys Ser Ser Pro Asp Asp
 305 310 315 320
 ccc aat tac tct ttg gtt gat gac tac agt ttg ctc tat cag taa aat 1065
 Pro Asn Tyr Ser Leu Val Asp Asp Tyr Ser Leu Leu Tyr Gln *
 321 326 331
 caatgaaacc agagcttttt cgggctagtg cttctgtgat atggaaaggg caccagagc 1125
 agcaggacct atagccacgt tatgtcagca atgaagactt tgaagtgaac ccttgctata 1185
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 caggttatga atgaattagg ttttcaacat gggaagcatg aaatccactt ctggatttgg 1365
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 a 1606

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 atg tcg gac agt gat cta ggt gag gac gaa ggc ctc ctc tcc ctg gcg 164
 Met Ser Asp Ser Asp Leu Gly Glu Asp Glu Gly Leu Leu Ser Leu Ala
 1 5 10 15
 ggc aaa agg aag cgc agg ggg aac ctg ccc aag gag tcg gtg aag atc 212
 Gly Lys Arg Lys Arg Arg Gly Asn Leu Pro Lys Glu Ser Val Lys Ile
 17 22 27 32
 ctc cgg gac tgg ctg tac ttg cac cgc tac aac gcc tac ccc tca gag 260
 Leu Arg Asp Trp Leu Tyr Leu His Arg Tyr Asn Ala Tyr Pro Ser Glu
 33 38 43 48
 cag gag aag ctg agc ctt tct gga cag acc aac ctg tca gtg ctg caa 308
 Gln Glu Lys Leu Ser Leu Ser Gly Gln Thr Asn Leu Ser Val Leu Gln

49	54	59	64			
ata tgt aac tgg ttc	atc aat gcc cgg cgg	cgg ctt ctc cca gac atg		356		
Ile Cys Asn Trp Phe	Ile Asn Ala Arg Arg	Arg Leu Leu Pro Asp Met				
65	70	75	80			
ctt cgg aag gat ggc	aaa gac cct aat cag	ttt acc att tcc cgc cgc		404		
Leu Arg Lys Asp Gly	Lys Asp Pro Asn Gln	Phe Thr Ile Ser Arg Arg				
81	86	91	96			
ggg ggt aag gcc tca	gat gtg gcc ctc ccc	cgt ggc agc agc ccc tca		452		
Gly Gly Lys Ala Ser	Asp Val Ala Leu Pro	Arg Gly Ser Ser Pro Ser				
97	102	107	112			
gtg ctg gct gtg tct	gtc cca gcc ccc acc	aat gtg ctc tcc ctg tct		500		
Val Leu Ala Val Ser	Val Pro Ala Pro Thr	Asn Val Leu Ser Leu Ser				
113	118	123	128			
gtg tgc tcc atg ccg	ctt cac tca ggc cag	ggg gaa aag cca gca gcc		548		
Val Cys Ser Met Pro	Leu His Ser Gly Gln	Gly Glu Lys Pro Ala Ala				
129	134	139	144			
cct ttc cca cgt ggg	gag ctg gag tct ccc	aag ccc ctg gtg acc cct		596		
Pro Phe Pro Arg Gly	Glu Leu Glu Ser Pro	Lys Pro Leu Val Thr Pro				
145	150	155	160			
ggt agc aca ctt act	ctg ctg acc agg gct	gag gct gga agc ccc aca		644		
Gly Ser Thr Leu Thr	Leu Leu Thr Arg Ala	Glu Ala Gly Ser Pro Thr				
161	166	171	176			
ggt gga ctc ttc aac	acg cca cca ccc aca	ccc cca gag cag gac aaa		692		
Gly Gly Leu Phe Asn	Thr Pro Pro Pro Thr	Pro Pro Glu Gln Asp Lys				
177	182	187	192			
gag gac ttc agc agc	ttc cag ctg ctg gtg	gag gtg gcg cta cag agg		740		
Glu Asp Phe Ser Ser	Phe Gln Leu Leu Val	Glu Val Ala Leu Gln Arg				
193	198	203	208			
gct gct gag atg gag	ctt cag aag cag cag	gac cca tca ctc cca tta		788		
Ala Ala Glu Met Glu	Leu Gln Lys Gln Gln	Asp Pro Ser Leu Pro Leu				
209	214	219	224			
ctg cac act ccc atc	cct tta gtc tct gaa	aat ccc cag tag gcactg		837		
Leu His Thr Pro Ile	Pro Leu Val Ser Glu	Asn Pro Gln *				
225	230	235				
ccaagaagg	tgctgaagg	tccagccag	tgctcctgggt	ttccgttttg	gttccctttc	897
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tcttcaacag	gaagatgcc	gctggcacca	ctgcactgtg	atggggggccc	tctcctctgc	1017
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atggtgctgc	tgcttctgct	gcttctccag	aaaatccctg	ggacaccttt	gttccagcct	1137
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cactgccact gaggattggt ttggaagaaa ggaatatttt tatcttgggg accagctaag 1497
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aaaggcaggg aaaaaaaaaa aa 1579

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aaaggattta cttgggggat ttagctcctg ccatcttttg attgccattt tctcatggaa 180
gatatagctt cttagctggg ccggaagcag atgccggcgg cgcggcgtgg cagggttgtg 240
gttccgggtc gggccgcgcc gcagccagct ctcggtctgc agccgcagcg ccccgccccc 300
gcgctccgga cctggcaggc ggcggctgca gggcagggtcc agggggccac atg gct 355
Met Ala
1

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gag ggg gac gca ggg agc gac cag agg cag aat gag gaa att gaa gca 403
Glu Gly Asp Ala Gly Ser Asp Gln Arg Gln Asn Glu Glu Ile Glu Ala
3 8 13 18

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atg gca gcc att tat ggc gag gag tgg tgt gtc att gat gac tgt gcc 451
Met Ala Ala Ile Tyr Gly Glu Glu Trp Cys Val Ile Asp Asp Cys Ala
19 24 29 34

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aaa ata ttt tgt att aga att agc gac gat ata gat gac ccc aaa tgg 499
Lys Ile Phe Cys Ile Arg Ile Ser Asp Asp Ile Asp Asp Pro Lys Trp
35 40 45 50

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aca ctt tgc ttg cag gtg atg ctg ccg aat gaa tac cca ggt aca gct 547
Thr Leu Cys Leu Gln Val Met Leu Pro Asn Glu Tyr Pro Gly Thr Ala
51 56 61 66

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cca cct atc tac cag ttg aat gct cct tgg ctt aaa ggg caa gaa cgt	595
Pro Pro Ile Tyr Gln Leu Asn Ala Pro Trp Leu Lys Gly Gln Glu Arg	
67 72 77 82	
gcg gat tta tca aat agc ctt gag gaa ata tat att cag aat atc ggt	643
Ala Asp Leu Ser Asn Ser Leu Glu Glu Ile Tyr Ile Gln Asn Ile Gly	
83 88 93 98	
gaa agt att ctt tac ctg tgg gtg gag aaa ata aga gat gtt ctt ata	691
Glu Ser Ile Leu Tyr Leu Trp Val Glu Lys Ile Arg Asp Val Leu Ile	
99 104 109 114	
caa aaa tct cag atg aca gaa cca ggc cca gat gta aag aag aaa act	739
Gln Lys Ser Gln Met Thr Glu Pro Gly Pro Asp Val Lys Lys Lys Thr	
115 120 125 130	
gaa gag gaa gat gtt gaa tgt gaa gat gat ctc att tta gca tgt cag	787
Glu Glu Glu Asp Val Glu Cys Glu Asp Asp Leu Ile Leu Ala Cys Gln	
131 136 141 146	
ccg gaa agt tcg gtt aaa gca ttg gat ttt gat atc agt gaa act cgg	835
Pro Glu Ser Ser Val Lys Ala Leu Asp Phe Asp Ile Ser Glu Thr Arg	
147 152 157 162	
aca gaa gta gaa gta gaa gaa tta cct ccg att gat cat ggc att cct	883
Thr Glu Val Glu Val Glu Glu Leu Pro Pro Ile Asp His Gly Ile Pro	
163 168 173 178	
att aca gac cga aga agt act ttt cag gca cac ttg gct cca gtg gtt	931
Ile Thr Asp Arg Arg Ser Thr Phe Gln Ala His Leu Ala Pro Val Val	
179 184 189 194	
tgt ccc aaa cag gtg aaa atg gtt ctt tcc aaa ttg tat gag aat aag	979
Cys Pro Lys Gln Val Lys Met Val Leu Ser Lys Leu Tyr Glu Asn Lys	
195 200 205 210	
aaa ata gct agt gcc acc cac aac atc tat gcc tac aga ata tat tgt	1027
Lys Ile Ala Ser Ala Thr His Asn Ile Tyr Ala Tyr Arg Ile Tyr Cys	
211 216 221 226	
gag gat aaa cag acc ttc tta cag gat tgt gag gat gat ggg gaa aca	1075
Glu Asp Lys Gln Thr Phe Leu Gln Asp Cys Glu Asp Asp Gly Glu Thr	
227 232 237 242	
gca gct ggt ggg cgt ctt ctt cat ctc atg gag att ttg aat gtg aag	1123
Ala Ala Gly Gly Arg Leu Leu His Leu Met Glu Ile Leu Asn Val Lys	
243 248 253 258	
aat gtc atg gtg gta gta tca cgc tgg tat gga ggg att ctg cta gga	1171
Asn Val Met Val Val Val Ser Arg Trp Tyr Gly Gly Ile Leu Leu Gly	
259 264 269 274	
cca gat cgc ttt aaa cat atc aac aac tgt gcc aga aac ata cta gtg	1219
Pro Asp Arg Phe Lys His Ile Asn Asn Cys Ala Arg Asn Ile Leu Val	
275 280 285 290	

gaa aag aac tac aca aat tca cct gag gag tca tct aag gct ttg gga	1267
Glu Lys Asn Tyr Thr Asn Ser Pro Glu Glu Ser Ser Lys Ala Leu Gly	
291 296 301 306	
aag aac aaa aaa gta aga aaa gac aag aag agg aat gaa cat taa tac	1315
Lys Asn Lys Lys Val Arg Lys Asp Lys Lys Arg Asn Glu His *	
307 312 317	
ctgaaactat aggaaaggtt aatttgccata taattatata tacattccat agtcatcaag	1375
gaatatattg tgcagagaga gtatccttga ctgcttaagt cagccagttc agcatggata	1435
ccaacattag cttttcttct tgggttatatc atctgccaaa aatagagAAC ttatgatcta	1495
ttcatgtgtg tttcaggctt atttgggaga actaatttga acttaatcac cacttcatct	1555
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aatccaggag tatccatctg cagttatgtg ctgaggtgat aattcatcca acatatttgt	1915
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tgattttcta gtctgctttt tttgtttaat tcttgtaatg taagcaataa atatggagtg	2035
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aaaggattta cttgggggat ttagctcctg ccatcttttg attgccattt tctcatggaa	180

Glu Asp Asp Gly Glu Thr Ala Ala Gly Gly Arg Leu Leu His Leu Met	
195 200 205 210	
gag att ttg aat gtg aag aat gtc atg gtg gta gta tca cgc tgg tat	1027
Glu Ile Leu Asn Val Lys Asn Val Met Val Val Val Ser Arg Trp Tyr	
211 216 221 226	
gga ggg att ctg cta gga cca gat cgc ttt aaa cat atc aac aac tgt	1075
Gly Gly Ile Leu Leu Gly Pro Asp Arg Phe Lys His Ile Asn Asn Cys	
227 232 237 242	
gcc aga aac ata cta gtg gaa aag aac tac aca aat tca cct gag gag	1123
Ala Arg Asn Ile Leu Val Glu Lys Asn Tyr Thr Asn Ser Pro Glu Glu	
243 248 253 258	
tca tct aag gct ttg gga aag aac aaa aaa gta aga aaa gac aag aag	1171
Ser Ser Lys Ala Leu Gly Lys Asn Lys Lys Val Arg Lys Asp Lys Lys	
259 264 269 274	
agg aat gaa cat taa tacctgaaac tataggaaag gttaatttgc ctataattat	1226
Arg Asn Glu His *	
275	
atatacattc catagtcac c aaggaatata ttgtgcagag agagtatcct tgactgctta	1286
agtcagccag ttcagcatgg ataccaacat tagcttttct tcttggttat atcatctgcc	1346
aaaaatagag aacttatgat ctattcatgt gtgtttcagg cttatttggg agaactaatt	1406
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gaattaactg tccatttcag tacatgtcaa gtgcctttgt taggtggaga agaaatgtct	1526
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gataattcat ccaacatatt tgtagcata aatattatgc ttcagtttct gttgcaaatt	1826
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aacattctcg tttcttttaa caacctggaa gtacctttct tgtgatcttc actgaggaat	2006
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g	2067
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 <222> (172)..(702)

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gtttttcagt atatacgatt catagatctg gaattcgcgg ccgctgcgac g atg gcg      177
                               Met Ala
                               1

atg agt ttc gag tgg ccg tgg cag tat cgc ttc cca ccc ttc ttt acg      225
Met Ser Phe Glu Trp Pro Trp Gln Tyr Arg Phe Pro Pro Phe Phe Thr
   3                               8                               13                               18

tta caa ccg aat gtg gac act cgg cag aag cag ctg gcc gcc tgg tgc      273
Leu Gln Pro Asn Val Asp Thr Arg Gln Lys Gln Leu Ala Ala Trp Cys
  19                               24                               29                               34

tcg ctg gtc ctg tcc ttc tgc cgc ctg cac aaa cag tcc agc atg acg      321
Ser Leu Val Leu Ser Phe Cys Arg Leu His Lys Gln Ser Ser Met Thr
  35                               40                               45                               50

gtg atg gaa gct cag gag agc ccg ctc ttc aac aac gtc aag cta cag      369
Val Met Glu Ala Gln Glu Ser Pro Leu Phe Asn Asn Val Lys Leu Gln
  51                               56                               61                               66

cga aag ctt cct gtg gag tgc atc cag att gta tta gag gaa ctg agg      417
Arg Lys Leu Pro Val Glu Ser Ile Gln Ile Val Leu Glu Glu Leu Arg
  67                               72                               77                               82

aag aaa ggg aac ctc gag tgg ttg gat aag agc aag tcc agc ttc ctg      465
Lys Lys Gly Asn Leu Glu Trp Leu Asp Lys Ser Lys Ser Ser Phe Leu
  83                               88                               93                               98

atc atg tgg ccg agg cca gaa gaa tgg ggg aaa ctc atc tat cag tgg      513
Ile Met Trp Arg Arg Pro Glu Glu Trp Gly Lys Leu Ile Tyr Gln Trp
  99                               104                               109                               114

gtt tcc agg agt ggc cag aac aac tcc gtc ttt acc ctg tat gaa ctg      561
Val Ser Arg Ser Gly Gln Asn Asn Ser Val Phe Thr Leu Tyr Glu Leu
 115                               120                               125                               130

act aat ggg gaa gac aca gag gat gag gag ttc cac ggg ctg gat gaa      609
Thr Asn Gly Glu Asp Thr Glu Asp Glu Glu Phe His Gly Leu Asp Glu
 131                               136                               141                               146

gcc act cta ctg ccg gct ctg cag gcc cta cag cag gag cac aag gcc      657
Ala Thr Leu Leu Arg Ala Leu Gln Ala Leu Gln Gln Glu His Lys Ala
 147                               152                               157                               162

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gag atc atc act gtc agc gat ggc cga ggc gtc aag ttc ttc tag cag 705
 Glu Ile Ile Thr Val Ser Asp Gly Arg Gly Val Lys Phe Phe *
 163 168 173

ggacctgtct ccctttactt cttacctccc acctttccag ggctttcaaa aggagacaga 765

cccagtgtcc cccaaagact ggatctgtga ctccaccaga ctcaaaagga ctccagtct 825

gaaggctggg acctggggat gggttttctca caccocatat gtctgtccct tggatagggt 885

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tagactgtcc ttgagccagg gtctgtaaac ctgacacttt atatgtgttc acacatgtaa 1005

gtacatacac acatgcgcct gcagcacatg cttctgtctc ctccctctcc cacccttcta 1065

gctgctgttg cctcccttct caggtctgtg ctggatcctt cctaggggat gggggaagcc 1125

ctggctgcag gcagccttcc aggcaatatg aagataggag gccacgggc ctggcagtga 1185

gaggtgtggc cccacaccga tttatgatat taaaatctca actcccaaaa aaaaaaaaa 1243

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<212> DNA

<213> Homo sapiens

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<222> (218) .. (1645)

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cccaggtcgc ccgtcagtct ccactagaga caggactgac cagttgctct tccttccaag 180

aaccttcgag atctgcggtc tgggggtctgg ttgaaag atg gcg gcc ctc act acc 235
 Met Ala Ala Leu Thr Thr

1

ctg ttt aag tac ata gat gaa aat cag gat cgc tac att aag aaa ctc 283
 Leu Phe Lys Tyr Ile Asp Glu Asn Gln Asp Arg Tyr Ile Lys Lys Leu
 7 12 17 22

gca aaa tgg gtg gct atc cag agt gtg tct gcg tgg ccg gag aag aga 331
 Ala Lys Trp Val Ala Ile Gln Ser Val Ser Ala Trp Pro Glu Lys Arg
 23 28 33 38

ggc gaa atc agg agg atg atg gaa gtt gct gct gca gat gtt aag cag 379
 Gly Glu Ile Arg Arg Met Glu Val Ala Ala Ala Asp Val Lys Gln
 39 44 49 54

ttg ggg ggc tct gtg gaa ctg gtg gat atc gga aaa caa aag ctc cct	427
Leu Gly Gly Ser Val Glu Leu Val Asp Ile Gly Lys Gln Lys Leu Pro	
55 60 65 70	
gat ggc tcg gag atc ccg ctc cct cct att ctg ctc ggc agg ctg ggc	475
Asp Gly Ser Glu Ile Pro Leu Pro Pro Ile Leu Leu Gly Arg Leu Gly	
71 76 81 86	
tct gac cca cag aag aag acc gtg tgc att tac ggg cac ctg gat gtg	523
Ser Asp Pro Gln Lys Lys Thr Val Cys Ile Tyr Gly His Leu Asp Val	
87 92 97 102	
cag cct gca gcc ctg gag gac ggc tgg gac agc gag ccc ttc acc ctg	571
Gln Pro Ala Ala Leu Glu Asp Gly Trp Asp Ser Glu Pro Phe Thr Leu	
103 108 113 118	
gtg gag cga gac ggc aag ctg tat ggg aga ggt tcg act gat gat aag	619
Val Glu Arg Asp Gly Lys Leu Tyr Gly Arg Gly Ser Thr Asp Asp Lys	
119 124 129 134	
ggc ccg gtg gcc ggc tgg ata aac gcc ctg gaa gcg tat cag aaa aca	667
Gly Pro Val Ala Gly Trp Ile Asn Ala Leu Glu Ala Tyr Gln Lys Thr	
135 140 145 150	
ggc cag gag att cct gtc aac gtc cga ttc tgc ctc gaa ggc atg gag	715
Gly Gln Glu Ile Pro Val Asn Val Arg Phe Cys Leu Glu Gly Met Glu	
151 156 161 166	
gag tca ggc tct gag ggc cta gac gag ctg att ttt gcc cgg aaa gac	763
Glu Ser Gly Ser Glu Gly Leu Asp Glu Leu Ile Phe Ala Arg Lys Asp	
167 172 177 182	
aca ttc ttt aag gat gtg gac tat gtc tgc att tct gac aat tac tgg	811
Thr Phe Phe Lys Asp Val Asp Tyr Val Cys Ile Ser Asp Asn Tyr Trp	
183 188 193 198	
ctg gga aag aag aag ccc tgc atc acc tac ggc ctc agg ggc att tgc	859
Leu Gly Lys Lys Lys Pro Cys Ile Thr Tyr Gly Leu Arg Gly Ile Cys	
199 204 209 214	
tac ttt ttc atc gag gtg gag tgc agc aac aaa gac ctc cat tct ggg	907
Tyr Phe Phe Ile Glu Val Glu Cys Ser Asn Lys Asp Leu His Ser Gly	
215 220 225 230	
gtg tac ggg ggc tcg gtg cat gag gcc atg act gat ctc att ttg ctg	955
Val Tyr Gly Gly Ser Val His Glu Ala Met Thr Asp Leu Ile Leu Leu	
231 236 241 246	
atg ggc tct ttg gtg gac aag agg ggg aac atc ctg atc ccc ggc att	1003
Met Gly Ser Leu Val Asp Lys Arg Gly Asn Ile Leu Ile Pro Gly Ile	
247 252 257 262	
aac gag gcc gtg gcc gcc gtc acg gaa gag gag cac aag ctg tac gac	1051
Asn Glu Ala Val Ala Val Thr Glu Glu Glu His Lys Leu Tyr Asp	
263 268 273 278	
gac atc gac ttt gac ata gag gag ttt gcc aag gat gtg ggg gcg cag	1099

Asp Ile Asp Phe Asp	Ile Glu Glu Phe Ala	Lys Asp Val Gly Ala Gln	
279	284	289	294
atc ctc ctg cac agc	cac aag aaa gac atc	ctc atg cac cga tgg cgg	1147
Ile Leu Leu His Ser	His Lys Lys Asp Ile	Leu Met His Arg Trp Arg	
295	300	305	310
tac ccg tct ctg tcc	ctc cat ggc atc gaa	ggc gcc ttc tct ggg tct	1195
Tyr Pro Ser Leu Ser	Leu His Gly Ile Glu	Gly Ala Phe Ser Gly Ser	
311	316	321	326
ggg gcc aag acc gtg	att ccc agg aag gtg	gtt ggc aag ttc tcc atc	1243
Gly Ala Lys Thr Val	Ile Pro Arg Lys Val	Val Gly Lys Phe Ser Ile	
327	332	337	342
agg ctc gtg ccg aac	atg act cct gaa gtc	gtc ggc gag cag gtc aca	1291
Arg Leu Val Pro Asn	Met Thr Pro Glu Val	Val Gly Glu Gln Val Thr	
343	348	353	358
agc tac cta act aag	aag ttt gct gaa cta	cgc agc ccc aat gag ttc	1339
Ser Tyr Leu Thr Lys	Lys Phe Ala Glu Leu	Arg Ser Pro Asn Glu Phe	
359	364	369	374
aag gtg tac atg ggc	cac ggt ggg aag ccc	tgg gtc tcc gac ttc agt	1387
Lys Val Tyr Met Gly	His Gly Gly Lys Pro	Trp Val Ser Asp Phe Ser	
375	380	385	390
cac cct cat tac ctg	gct ggg aga aga gcc	atg aag aca gtt ttt ggt	1435
His Pro His Tyr Leu	Ala Gly Arg Arg Ala	Met Lys Thr Val Phe Gly	
391	396	401	406
gtt gag cca gac ttg	acc agg gaa ggc ggc	agt att ccc gtg acc ttg	1483
Val Glu Pro Asp Leu	Thr Arg Glu Gly Gly	Ser Ile Pro Val Thr Leu	
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acc ttt cag gag gcc	acg ggc aag aac gtc	atg ctg ctg cct gtg ggg	1531
Thr Phe Gln Glu Ala	Thr Gly Lys Asn Val	Met Leu Leu Pro Val Gly	
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Ser Ala Asp Asp Gly	Ala His Ser Gln Asn	Glu Lys Leu Asn Arg Tyr	
439	444	449	454
aac tac ata gag gga	acc aag atg ctg gcc	gcg tac ctg tat gag gtc	1627
Asn Tyr Ile Glu Gly	Thr Lys Met Leu Ala	Ala Tyr Leu Tyr Glu Val	
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Ser Gln Leu Lys Asp	*		
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 Leu Leu Pro Asp Thr Glu Arg Ile Arg Arg Ala Thr Glu Gln Leu Gln
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 atc gtt ctt cgg gcc ccc gcc gct ttg tcg gct ctc tgc gac ctg cta 206
 Ile Val Leu Arg Ala Pro Ala Ala Leu Ser Ala Leu Cys Asp Leu Leu
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Ala Ser Ala Ala Asp Pro Gln Ile Arg Gln Phe Ala Ala Val Leu Thr	
46 51 56 61	
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Arg Arg Arg Leu Asn Thr Arg Trp Arg Arg Leu Ala Ala Glu Gln Arg	
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Glu Ser Leu Lys Ser Leu Ile Leu Thr Ala Leu Gln Arg Glu Thr Glu	
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His Cys Val Ser Leu Ser Leu Ala Gln Leu Ser Ala Thr Ile Phe Arg	
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Lys Glu Gly Leu Glu Ala Trp Pro Gln Leu Leu Gln Leu Leu Gln His	
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Ser Thr His Ser Pro His Ser Pro Glu Arg Glu Met Gly Leu Leu Leu	
126 131 136 141	
cta agt gtg gtg gtg acc tcc cgg ccc gag gcc ttc caa ccc cac cac	542
Leu Ser Val Val Val Thr Ser Arg Pro Glu Ala Phe Gln Pro His His	
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Arg Glu Leu Leu Arg Leu Leu Asn Glu Thr Leu Gly Glu Val Gly Ser	
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Pro Gly Leu Leu Phe Tyr Ser Leu Arg Thr Leu Thr Thr Met Ala Pro	
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Tyr Leu Ser Thr Glu Asp Val Pro Leu Ala Arg Met Leu Val Pro Lys	
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Cys Glu Ala Leu Glu Ala Leu Asp Glu Leu Leu Glu Ser Glu Val Pro	
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Val Ile Thr Pro Tyr Leu Ser Glu Val Leu Thr Phe Cys Leu Glu Val	
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Ala Arg Asn Val Ala Leu Gly Asn Ala Ile Arg Ile Arg Ile Leu Cys	
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Arg	Leu	Leu	Pro	Pro	Leu	Leu	His	Thr	Leu	Phe	Pro	Ile	Val	Ala	Ala	
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Val	Gln	Val	Val	Asp	Met	Leu	Ala	Leu	His	Leu	Pro	Pro	Glu	Lys	Leu	
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Cys	Pro	Gln	Leu	Met	Pro	Met	Leu	Glu	Glu	Ala	Leu	Arg	Ser	Glu	Ser	
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Pro	Tyr	Gln	Arg	Lys	Ala	Gly	Leu	Leu	Val	Leu	Ala	Val	Leu	Ser	Asp	
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Ser	Val	Pro	Leu	Gly	His	Thr	His	His	Leu	Ala	Lys	Ala	Cys	Tyr	Ala	
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Leu Arg Glu Phe Leu Leu Thr Gly Arg Glu Thr Phe Ser Leu Cys Arg				
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Tyr Arg Ala Trp Arg His Trp Gly Cys Trp Thr Gln Gln Val Gly Ser				
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Leu Cys Thr Glu Arg Gly Ala Pro Gly Val Ser Val Asp Met Asn Ile	
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Thr Tyr Met Ser Pro Ala Lys Leu Gly Glu Asp Ile Val Ile Thr Ala	
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Asp Ile His Gln Gln Tyr Lys Ile Leu Asp Val Met Leu Lys Gly Leu		
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Phe Lys Val Leu Glu Asp Ser Arg Thr Val Leu Thr Ala Ala Asp Val		
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Leu Pro Asp Gly Pro Phe Pro Gln Asp Glu Lys Leu Lys Asp Ala Phe		
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Ser His Val Val Glu Asn Thr Ala Phe Phe Gly Asp Val Val Leu Arg		
106 111 116 121		
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Phe Pro Arg Ile Val His Tyr Tyr Phe Asp His Asn Ser Asn Trp Asn		
122 127 132 137		
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Leu Leu Ile Arg Trp Gly Ile Ser Phe Cys Asn Gln Thr Gly Val Phe		
138 143 148 153		
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Asn Gln Gly Pro His Ser Pro Ile Leu Ser Leu Met Ala Gln Glu Leu		
154 159 164 169		
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Gly Ile Ser Glu Lys Asp Ser Asn Phe Gln Asn Pro Phe Lys Ile Asp		
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cgc aca gag ttc att ccc agc act gac cct ttc cag aag gcc ctg aga	806	
Arg Thr Glu Phe Ile Pro Ser Thr Asp Pro Phe Gln Lys Ala Leu Arg		
186 191 196 201		
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Met Ser Phe Arg Gly
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Gly Gly Arg Gly Gly Phe Asn Arg Gly Gly Gly Gly Gly Gly Phe Asn
6 11 16 21
cga ggc ggc agc agc aac cac ttc cga ggt gga ggc ggc ggt gga ggc 389
Arg Gly Gly Ser Ser Asn His Phe Arg Gly Gly Gly Gly Gly Gly Gly Gly
22 27 32 37
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Gly Gly Asn Phe Arg Gly Gly Gly Arg Gly Gly Phe Gly Arg Gly Gly
38 43 48 53
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Gly Arg Gly Gly Phe Asn Lys Gly Gln Asp Gln Gly Pro Pro Glu Arg
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Val Val Leu Leu Gly Glu Phe Leu His Pro Cys Glu Asp Asp Ile Val
70 75 80 85
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Cys Lys Cys Thr Thr Asp Glu Asn Lys Val Pro Tyr Phe Asn Ala Pro
86 91 96 101
gtt tac tta gaa aac aaa gaa caa att gga aaa gtg gat gaa ata ttt 629
Val Tyr Leu Glu Asn Lys Glu Gln Ile Gly Lys Val Asp Glu Ile Phe
102 107 112 117
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Gly Gln Leu Arg Asp Phe Tyr Phe Ser Val Lys Leu Ser Glu Asn Met	
118 123 128 133	
aag gct tca tcc ttt aaa aaa cta cag aag ttt tat ata gac cca tat	725
Lys Ala Ser Ser Phe Lys Lys Leu Gln Lys Phe Tyr Ile Asp Pro Tyr	
134 139 144 149	
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Lys Leu Leu Pro Leu Gln Arg Phe Leu Pro Arg Pro Pro Gly Glu Lys	
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Gly Pro Pro Arg Gly Gly Gly Arg Gly Gly Arg Gly Gly Gly Arg Gly	
166 171 176 181	
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Gly Gly Gly Arg Gly Gly Gly Arg Gly Gly Gly Phe Arg Gly Gly Arg	
182 187 192 197	
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Gly Gly Gly Gly Gly Gly Phe Arg Gly Gly Arg Gly Gly Gly Phe Arg	
198 203 208 213	
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Arg Ala Ala Gly Val Gly Leu Val Asp Cys His Cys His Leu Ser Ala	

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Pro Asp Phe Asp Arg Asp Leu Asp Asp Val Leu Glu Lys Ala Lys Lys				
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Ala Asn Val Val Ala Leu Val Ala Val Ala Glu His Ser Gly Glu Phe				
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Cys Leu Gly Val His Pro Val Gln Gly Leu Pro Pro Glu Asp Gln Arg				
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Ser Val Thr Leu Lys Asp Leu Asp Val Ala Leu Pro Ile Ile Glu Asn				
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tat aag gat cgg ttg ttg gca att gga gag gtt gga cta gat ttc tcc				391
Tyr Lys Asp Arg Leu Leu Ala Ile Gly Glu Val Gly Leu Asp Phe Ser				
98	103	108	113	
ccc aga ttt gct ggc act ggt gaa cag aag gaa gag caa aga caa gtc				439
Pro Arg Phe Ala Gly Thr Gly Glu Gln Lys Glu Glu Gln Arg Gln Val				
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162	167	172	177	
gta gcc atg gaa gga gta aga gct ggg tac ttc ttc tca att ccc cct				631
Val Ala Met Glu Gly Val Arg Ala Gly Tyr Phe Phe Ser Ile Pro Pro				
178	183	188	193	
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Ser Ile Ile Arg Ser Gly Gln Gln Lys Leu Val Lys Gln Leu Pro Leu				
194	199	204	209	
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Thr Ser Ile Cys Leu Glu Thr Asp Ser Pro Ala Leu Gly Pro Glu Lys				
210	215	220	225	
cag gta cgg aat gag ccc tgg aac att tct att tca gca gaa tat att				775
Gln Val Arg Asn Glu Pro Trp Asn Ile Ser Ile Ser Ala Glu Tyr Ile				
226	231	236	241	

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 Ala Gln Val Lys Gly Ile Ser Val Glu Glu Val Ile Glu Val Thr Thr
 242 247 252 257

cag aat gca tta aaa ctg ttt cct aag ctc cga cac ttg ctc cag aaa 871
 Gln Asn Ala Leu Lys Leu Phe Pro Lys Leu Arg His Leu Leu Gln Lys
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 Met Trp Asn Cys Leu Ser Lys Ser Leu Gly
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 Leu Ile Glu Gly Tyr Gly Gly Arg Gly Lys Gly Gly Leu Pro Ala Thr
 11 16 21 26

ctt tcc ccg gct gaa gaa aaa aag gct aag gga ccc cat gag aag tat 207
 Leu Ser Pro Ala Glu Glu Lys Lys Ala Lys Gly Pro His Glu Lys Tyr
 27 32 37 42

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 Gly Tyr Asn Ser Tyr Leu Ser Glu Lys Ile Ser Leu Asp Arg Ser Ile
 43 48 53 58

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Pro Asp Tyr Arg Pro Thr Lys Cys Lys Glu Leu Lys Tyr Ser Lys Asp	
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Leu Pro Gln Ile Ser Ile Ile Phe Ile Phe Val Asn Glu Ala Leu Ser	
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Val Ile Leu Arg Ser Val His Ser Ala Val Asn His Thr Pro Thr His	
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107 112 117 122	
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Leu Lys Val Pro Leu Glu Glu Tyr Val His Lys Arg Tyr Pro Gly Leu	
123 128 133 138	
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Val Lys Val Val Arg Asn Gln Lys Arg Glu Gly Leu Ile Arg Ala Arg	
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Ala His Val Glu Phe Thr Ala Gly Trp Ala Glu Pro Val Leu Ser Arg	
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Ile Gln Glu Asn Arg Lys Arg Val Ile Leu Pro Ser Ile Asp Asn Ile	
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Lys Gln Asp Asn Phe Glu Val Gln Arg Tyr Glu Asn Ser Ala His Gly	
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219 224 229 234	
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Trp Asp Ala Gly Asp Pro Ser Leu Pro Ile Arg Ser Val Ala Gly Leu	
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Asn Glu Tyr Val Thr Ser Gln Met Arg Thr Ser Asp Ser Ser Val Thr	
251 256 261 266	
tca aat gtc agc agc atg atg tga	903
Ser Asn Val Ser Ser Met Met *	
267 272	

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133 138 143 148	
gac att gtc aaa gcc atc tat gac atg atg ggg aaa tac aca tat cct	836
Asp Ile Val Lys Ala Ile Tyr Asp Met Met Gly Lys Tyr Thr Tyr Pro	
149 154 159 164	
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Val Leu Lys Glu Asp Thr Pro Arg Gln His Val Asp Val Phe Phe Gln	
165 170 175 180	
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181 186 191 196	
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197 202 207 212	
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Gln Asn Val Met *	
213	
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gacagaaaca ctttttacac ttgtgaagaa ttctctgctg aagactttct atggaaccca	1155
gcatcatgtg gctcagtctc tgattgccaa ctcttctctt ttcttcttct tgagagagac	1215
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 Ala Val Leu Pro Pro Pro Lys Gln Pro Ser Pro Ser Pro Pro Met Ser
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 Val Ala Thr Arg Ser Thr Gly Thr Leu Gln Leu Pro Pro Gln Lys Pro
 23 28 33 38
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 Lys Gly Gly Glu Gln Asp Cys Ala Leu Glu Glu Leu Cys Lys Pro Leu
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 71 76 81 86
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 Ala His Tyr Gln Gly Lys Asn His Gly Lys Lys Leu Arg Asn Tyr Tyr
 87 92 97 102
 gca gca aat agc tgt cct cct cct gct aga atg agc aat gtg gtc gag 628
 Ala Ala Asn Ser Cys Pro Pro Pro Ala Arg Met Ser Asn Val Val Glu
 103 108 113 118
 cct gca gct act cca gtt gtt cca gtc cct ccg cag atg ggc tcc ttt 676
 Pro Ala Ala Thr Pro Val Val Pro Val Pro Pro Gln Met Gly Ser Phe
 119 124 129 134
 aag cca gga ggc cga gtg atc ctg gcc acg gag aat gat tac tgt aag 724
 Lys Pro Gly Gly Arg Val Ile Leu Ala Thr Glu Asn Asp Tyr Cys Lys

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Gln Gly Lys Asn His Ala Lys Arg Leu Arg Leu Ala Glu Ala Gln Ser				
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Asn Ser Phe Ser Glu Ser Ser Glu Leu Gly Gln Arg Arg Ala Arg Lys				
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Glu Gly Asn Glu Phe Lys Met Met Pro Asn Arg Arg Asn Met Tyr Thr				
199	204	209	214	
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Val Gln Asn Asn Ser Gly Pro Tyr Phe Asn Pro Arg Ser Arg Gln Arg				
215	220	225	230	
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Ile Pro Arg Asp Leu Ala Met Cys Val Thr Pro Ser Gly Gln Phe Tyr				
231	236	241	246	
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Cys Ser Met Cys Asn Val Gly Ala Gly Glu Glu Met Glu Phe Arg Gln				
247	252	257	262	
cat tta gag agc aag caa cat aag agc aag gtg tct gaa cag cgg tac				1108
His Leu Glu Ser Lys Gln His Lys Ser Lys Val Ser Glu Gln Arg Tyr				
263	268	273	278	
agg aat gag atg gag aat ctg gga tat gta tag tgattatc atattaagat				1159
Arg Asn Glu Met Glu Asn Leu Gly Tyr Val *				
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 290 295 300

acc att cta aca atg gac atg ctc acc gtg aag gtg ggt gag ccc aaa 1078
 Thr Ile Leu Thr Met Asp Met Leu Thr Val Lys Val Gly Glu Pro Lys
 305 310 315 320

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 Gly Tyr Pro Pro Glu Asp Ile Phe Asn Leu Val Gly Lys Lys Val Leu
 325 330 335

gtc act gtt gaa gag gat gac acc atc atg gaa gaa ttg gta gat aat 1174
 Val Thr Val Glu Glu Asp Asp Thr Ile Met Glu Glu Leu Val Asp Asn
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gccgcatccc tcccgcagcg acggcggccc gggacccgcg ggctgtgaac c atg aac 177
 Met Asn
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acc cgc aat aga gtg gtg aac tcc ggg ctc ggc gcc tcc cct gcc tcc 225
 Thr Arg Asn Arg Val Val Asn Ser Gly Leu Gly Ala Ser Pro Ala Ser
 5 10 15

cgc ccg acc cgg gat ccc cag gac cct tct ggg cgg caa ggg gag ctg 273
 Arg Pro Thr Arg Asp Pro Gln Asp Pro Ser Gly Arg Gln Gly Glu Leu
 20 25 30

agc ccc gtg gaa gac cag aga gag ggt ttg gag gca gcc cct aag ggc 321
 Ser Pro Val Glu Asp Gln Arg Glu Gly Leu Glu Ala Ala Pro Lys Gly
 35 40 45 50

cct tcg cgg gag agc gtc gtg cac gcg ggc cag agg cgc aca agt gca 369
 Pro Ser Arg Glu Ser Val Val His Ala Gly Gln Arg Arg Thr Ser Ala
 55 60 65

tac acc ttg ata gca cca aat ata aac cgg aga aat gag ata caa aga 417

Tyr	Thr	Leu	Ile	Ala	Pro	Asn	Ile	Asn	Arg	Arg	Asn	Glu	Ile	Gln	Arg		
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Ile	Ala	Glu	Gln	Glu	Leu	Ala	Asn	Leu	Glu	Lys	Trp	Lys	Glu	Gln	Asn		
		85					90					95					
aga	gct	aaa	ccg	gtt	cac	ctg	gtg	ccc	aga	cgg	cta	ggg	gga	agc	cag	513	
Arg	Ala	Lys	Pro	Val	His	Leu	Val	Pro	Arg	Arg	Leu	Gly	Gly	Ser	Gln		
	100					105					110						
tca	gaa	act	gaa	gtc	aga	cag	aaa	caa	caa	ctc	cag	ctg	atg	caa	tct	561	
Ser	Glu	Thr	Glu	Val	Arg	Gln	Lys	Gln	Gln	Leu	Gln	Leu	Met	Gln	Ser		
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Lys	Tyr	Lys	Gln	Lys	Leu	Lys	Arg	Glu	Glu	Ser	Val	Arg	Ile	Lys	Lys		
			135					140						145			
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Glu	Ala	Glu	Glu	Ala	Glu	Leu	Gln	Lys	Met	Lys	Ala	Ile	Gln	Arg	Glu		
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Lys	Ser	Asn	Lys	Leu	Glu	Glu	Lys	Lys	Arg	Leu	Gln	Glu	Asn	Leu	Arg		
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Arg	Glu	Ala	Phe	Arg	Glu	His	Gln	Gln	Tyr	Lys	Thr	Ala	Glu	Phe	Leu		
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Ser	Lys	Leu	Asn	Thr	Glu	Ser	Pro	Asp	Arg	Ser	Ala	Cys	Gln	Ser	Ala		
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Val	Cys	Gly	Pro	Gln	Ser	Ser	Thr	Trp	Ala	Arg	Ser	Trp	Ala	Tyr	Arg		
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Asp	Ser	Leu	Lys	Ala	Glu	Glu	Asn	Arg	Lys	Leu	Gln	Lys	Met	Lys	Asp		
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Glu	Gln	Glu	Arg	Ala	Lys	Ile	His	Gln	Thr	Glu	His	Arg	Arg	Val	Asn		
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Glu	Gln	Ser	Gly	Gly	Cys	Trp	Asn	Met	Asn	Ser	Gly	Asn	Ser	Trp	Gly		
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Ile																	

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aacctctttc acgagctata aaagaaaggg aggaatc atg tcc aca att gca gct 175
                Met Ser Thr Ile Ala Ala
                1                      5

ttc tat ggc ggc aag tcc att ctc atc acg ggg gcc aca ggc ttt ctg 223
Phe Tyr Gly Gly Lys Ser Ile Leu Ile Thr Gly Ala Thr Gly Phe Leu
                10                      15                      20

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Val Ala Lys Arg Glu Arg Glu Ala Ala Thr Lys His Ser Lys Ala Ser	
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ctg ccc acg ggc gaa ggc agc atc agc cat gag gag cag aag tca gtc	497
Leu Pro Thr Gly Glu Gly Ser Ile Ser His Glu Glu Gln Lys Ser Val	
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Arg Leu Ala Arg Glu Leu Glu Ser Arg Glu Ala Glu Leu Arg Arg Arg	
136 141 146 151	
gac acc ttc tac aag gag cag ctg gag cgt att gag agg aag aat gct	593
Asp Thr Phe Tyr Lys Glu Gln Leu Glu Arg Ile Glu Arg Lys Asn Ala	
152 157 162 167	
gag atg tat aaa ctg tct tca gag caa ttc cat gag gca gcc tca aag	641
Glu Met Tyr Lys Leu Ser Ser Glu Gln Phe His Glu Ala Ala Ser Lys	
168 173 178 183	
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Met Glu Ser Thr Ile Lys Pro Arg Arg Val Glu Pro Val Cys Ser Gly	
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Leu Gln Ala Gln Ile Leu His Cys Tyr Arg Asp Arg Pro His Glu Val	
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Leu Leu Cys Ser Asp Leu Val Lys Ala Tyr Gln Arg Cys Val Ser Ala	
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193

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 tgtgttcttc ccaggtgcg tctggctga gagttggagc tctccagcaa c atg cct 177
 Met Pro

1

gag cag agt aac gat tac cgg gtg gcc gtg ttt ggg gct ggc ggt gtt	225
Glu Gln Ser Asn Asp Tyr Arg Val Ala Val Phe Gly Ala Gly Gly Val	
3 8 13 18	
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Gly Lys Ser Ser Leu Val Leu Arg Phe Val Lys Gly Thr Phe Arg Glu	
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agc tac atc ccg acg gtg gaa gac acc tac cgg caa gtg atc agc tgt	321
Ser Tyr Ile Pro Thr Val Glu Asp Thr Tyr Arg Gln Val Ile Ser Cys	
35 40 45 50	
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Asp Lys Ser Ile Cys Thr Leu Gln Ile Thr Asp Thr Thr Gly Ser His	
51 56 61 66	
cag ttc ccg gcc atg cag cgg ctg tcc atc tcc aaa ggg cac gcc ttc	417
Gln Phe Pro Ala Met Gln Arg Leu Ser Ile Ser Lys Gly His Ala Phe	
67 72 77 82	
atc ctg gtg tac tcc att acc agc cga cag tcc ttg gag gag ctc aag	465
Ile Leu Val Tyr Ser Ile Thr Ser Arg Gln Ser Leu Glu Glu Leu Lys	
83 88 93 98	
ccc atc tac gaa caa atc tgc gag atc aaa ggg gac gtg gag agc atc	513
Pro Ile Tyr Glu Gln Ile Cys Glu Ile Lys Gly Asp Val Glu Ser Ile	
99 104 109 114	
ccc atc atg ctg gtg ggg aac aag tgt gat gag agc ccc agc cgc gag	561
Pro Ile Met Leu Val Gly Asn Lys Cys Asp Glu Ser Pro Ser Arg Glu	
115 120 125 130	
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Val Gln Ser Ser Glu Ala Glu Ala Leu Ala Arg Thr Trp Lys Cys Ala	
131 136 141 146	
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Phe Met Glu Thr Ser Ala Lys Leu Asn His Asn Val Lys Glu Leu Phe	
147 152 157 162	
cag gag ctg ctc aac ctg gag aag cgc agg acc gtg agt ctc cag atc	705
Gln Glu Leu Leu Asn Leu Glu Lys Arg Arg Thr Val Ser Leu Gln Ile	
163 168 173 178	
gac ggg aaa aag agc aag cag cag aaa agg aaa gag aag ctc aaa ggc	753
Asp Gly Lys Lys Ser Lys Gln Gln Lys Arg Lys Glu Lys Leu Lys Gly	
179 184 189 194	
aag tgc gtg atc atg tga aggccc ttctgtcggg aggagcagct gtgtgtcccc	807
Lys Cys Val Ile Met *	
195 200	
ggcacctcac tccccaaaa tgacaccac cgctgtcagg gtagcatgta taatgccac	867
gtgttaaaca ttgcatttaa tcgagatgcg tcctattgtc cttaagaggg cgtttcacac	927
caccaacagt aagccacca ctctggagtc acagaatctg ccaggcggtt caagtgaaaa	987

ccaacacact cagcatccct gggaactgag aggtgccagc aattgctgaa ggtggcgatg 1047
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Arg Val Leu Val Arg Arg Cys Trp Gly Pro Pro Leu Ala His Gly Ala
2 7 12 17

agg cgt ggg agg ccg agt ccc cag tgg cga gca ctg gcc cga ctc ggc 153
Arg Arg Gly Arg Pro Ser Pro Gln Trp Arg Ala Leu Ala Arg Leu Gly
18 23 28 33

tgg gag gac tgc cgg gac tcc aga gtc cgc gag aag cct ccc tgg cgg 201
Trp Glu Asp Cys Arg Asp Ser Arg Val Arg Glu Lys Pro Pro Trp Arg
34 39 44 49

gtg ctc ttc ttc ggc acg gac cag ttc gcc cgc gag gcg ctg cgg gcg 249
Val Leu Phe Phe Gly Thr Asp Gln Phe Ala Arg Glu Ala Leu Arg Ala
50 55 60 65

ctg cac gcc gcc agg gaa aac aaa gaa gaa gag tta atc gac aaa ctg 297
Leu His Ala Ala Arg Glu Asn Lys Glu Glu Glu Leu Ile Asp Lys Leu
66 71 76 81

gag gtg gtc aca atg cct tcc cca tca cca aaa gga ctg cca gtg aag 345
Glu Val Val Thr Met Pro Ser Pro Ser Pro Lys Gly Leu Pro Val Lys
82 87 92 97

caa tat gct gtg cag tct cag ctt ccc gta tat gag tgg ccg gat gtg 393
Gln Tyr Ala Val Gln Ser Gln Leu Pro Val Tyr Glu Trp Pro Asp Val
98 103 108 113

gga tct gga gaa tat gat gtt gga gta gtg gct tcg ttt ggc cga ctt 441
Gly Ser Gly Glu Tyr Asp Val Gly Val Val Ala Ser Phe Gly Arg Leu
114 119 124 129

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Leu Asn Glu Ala Leu Ile Leu Lys Phe Pro Tyr Gly Ile Leu Asn Val	
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cat ccc agt tgc ctc ccg aga tgg cgt ggc cca gcc cct gta atc cat	537
His Pro Ser Cys Leu Pro Arg Trp Arg Gly Pro Ala Pro Val Ile His	
146 151 156 161	
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Thr Val Leu His Gly Asp Thr Val Thr Gly Val Thr Ile Met Gln Ile	
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Pro Val Pro Pro Lys Ser Thr Ala Lys Glu Leu Glu Ala Val Leu Ser	
194 199 204 209	
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Arg Leu Gly Ala Asn Met Leu Ile Ser Val Leu Lys Asn Leu Pro Glu	
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Ser Leu Ser Asn Gly Arg Gln Gln Pro Met Glu Gly Ala Thr Tyr Ala	
226 231 236 241	
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Pro Lys Ile Ser Ala Gly Thr Ser Cys Ile Lys Trp Glu Glu Gln Thr	
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Ser Glu Gln Ile Phe Arg Leu Tyr Arg Ala Ile Gly Asn Ile Ile Pro	
258 263 268 273	
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Leu Gln Thr Leu Trp Met Ala Asn Thr Ile Lys Leu Leu Asp Leu Val	
274 279 284 289	
gaa gtt aac agt tca gtc ctt gct gat cca aaa tta acg gga cag gct	969
Glu Val Asn Ser Ser Val Leu Ala Asp Pro Lys Leu Thr Gly Gln Ala	
290 295 300 305	
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Leu Ile Pro Gly Ser Val Ile Tyr His Lys Gln Ser Gln Ile Leu Leu	
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Val Tyr Cys Lys Asp Gly Trp Ile Gly Val Arg Ser Val Met Leu Lys	
322 327 332 337	
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Val Arg Ala Phe Leu Arg Glu His Pro Ser Leu Arg Leu Gln Thr Asp	
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Ala Arg Lys Val Arg Cys Ile Leu Thr Gly His Glu Leu Pro Cys Arg	
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Leu Pro Glu Leu Gln Val Tyr Thr Arg Gly Lys Lys Tyr Gln Arg Leu	
40 45 50 55	
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Val Arg Ala Ser Pro Ala Phe Asp Tyr Ala Glu Phe Glu Pro His Ile	
56 61 66 71	
gtg ccc agc acc aag aac ccg cac cag ttg ttc tgc aaa ctc acc ctg	712
Val Pro Ser Thr Lys Asn Pro His Gln Leu Phe Cys Lys Leu Thr Leu	
72 77 82 87	
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Arg His Ile Asn Lys Cys Pro Glu His Val Leu Arg His Thr Gln Gly	
88 93 98 103	

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104 109 114 119	
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Gly Val Glu Tyr Val Pro Ala Cys Leu Val His Arg Arg Arg Arg Arg	
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Glu Asp Gln Met Asp Gly Asp Gly Pro Arg Pro Arg Glu Ala Phe Trp	
136 141 146 151	
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Glu Pro Thr Ser Ser Asp Glu Gly Gly Ala Ala Ser Asp Asp Ser Met	
152 157 162 167	
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Thr Asp Leu Tyr Pro Pro Glu Leu Phe Thr Arg Lys Asp Leu Gly Ser	
168 173 178 183	
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Thr Glu Asp Gly Asp Gly Thr Asp Asp Phe Leu Thr Asp Lys Glu Asp	
184 189 194 199	
gag aag gca aag ccc cca aga gag aag gcc act gat gag ggc agg aga	1096
Glu Lys Ala Lys Pro Pro Arg Glu Lys Ala Thr Asp Glu Gly Arg Arg	
200 205 210 215	
gag acg acc gtg tac cga ggg ctg gtc cag aag cgc ggg aag aag cag	1144
Glu Thr Thr Val Tyr Arg Gly Leu Val Gln Lys Arg Gly Lys Lys Gln	
216 221 226 231	
ttg ggc tcg ttg aaa aag aag ttc aag agt cat cac cgc aaa ccc aag	1192
Leu Gly Ser Leu Lys Lys Lys Phe Lys Ser His His Arg Lys Pro Lys	
232 237 242 247	
agc ttc agc tcc tgt aaa cag cca ggt taa t aaaagcacat gccgtgaaaa	1243
Ser Phe Ser Ser Cys Lys Gln Pro Gly *	
248 253	
aaaaaaaa	1251

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<220>
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 <222> (668)..(1930)

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cgctttctcc ttctccgtgg cctacgaggg tctggatcct tctctgccgg ctctgtggcc 180

gtgcctttgc ccttctgcga ggccctgaat ctgatccctt cccttcatat ccggatccgg 240

gctcctccct ccaagcccg ggttccggac acctcccca agacaacccc tctggcctcc 300

tctccttcag tacttggaa ctgatctctt ctccctaatt ctgcggatcc ggccccta 360

attctttatc agaccctcag acaagaggct gacttctgcc cccttgtaa ggagcgaggg 420

cactttctc tocaccccat gctagcgagg ataacttatt tctctctgg aattgcatct 480

tatgcgcctt tccccacca tccccacagc ccctgcaata ccagtttgg cctcttttgc 540

ttgtaataac gcagatccca gcgccaggg acctagaac agaccttttt ctttctcgcg 600

tggggcctga ctcttcagt gaagcctctc cagccctct atctgcaggt cccagcctg 660

ggtaaag atg gcc cca tgg ccc ccg aag ggc cta gtc cca gct gtg ctc 709
Met Ala Pro Trp Pro Pro Lys Gly Leu Val Pro Ala Val Leu
1 5 10

tgg ggc ctc agc ctc ttc ctc aac ctc cca gga cct atc tgg ctc cag 757
Trp Gly Leu Ser Leu Phe Leu Asn Leu Pro Gly Pro Ile Trp Leu Gln
15 20 25 30

ccc tct cca cct ccc cag tct tct ccc ccg cct cag ccc cat ccg tgt 805
Pro Ser Pro Pro Pro Gln Ser Ser Pro Pro Pro Gln Pro His Pro Cys
31 36 41 46

cat acc tgc cgg gga ctg gtt gac agc ttt aac aag ggc ctg gag aga 853
His Thr Cys Arg Gly Leu Val Asp Ser Phe Asn Lys Gly Leu Glu Arg
47 52 57 62

acc atc cgg gac aac ttt gga ggt gga aac act gcc tgg gag gaa gag 901
Thr Ile Arg Asp Asn Phe Gly Gly Gly Asn Thr Ala Trp Glu Glu Glu
63 68 73 78

aat ttg tcc aaa tac aaa gac agt gag acc cgc ctg gta gag gtg ctg 949
Asn Leu Ser Lys Tyr Lys Asp Ser Glu Thr Arg Leu Val Glu Val Leu
79 84 89 94

gag ggt gtg tgc agc aag tca gac ttc gag tgc cac cgc ctg ctg gag 997
Glu Gly Val Cys Ser Lys Ser Asp Phe Glu Cys His Arg Leu Leu Glu
95 100 105 110

ctg agt gag gag ctg gtg gag agc tgg tgg ttt cac aag cag cag gag 1045
Leu Ser Glu Glu Leu Val Glu Ser Trp Trp Phe His Lys Gln Gln Glu
111 116 121 126

gcc ccg gac ctc ttc cag tgg ctg tgc tca gat tcc ctg aag ctc tgc 1093
Ala Pro Asp Leu Phe Gln Trp Leu Cys Ser Asp Ser Leu Lys Leu Cys
127 132 137 142

tgc ccc gca ggc acc ttc ggg ccc tcc tgc ctt ccc tgt cct ggg gga 1141

Cys Pro Ala Gly Thr Phe Gly Pro Ser Cys Leu Pro Cys Pro Gly Gly	
143 148 153 158	
aca gag agg ccc tgc ggt ggc tac ggg cag tgt gaa gga gaa ggg aca	1189
Thr Glu Arg Pro Cys Gly Gly Tyr Gly Gln Cys Glu Gly Glu Gly Thr	
159 164 169 174	
cga ggg ggc agc ggg cac tgt gac tgc caa gcc ggc tac ggg ggt gag	1237
Arg Gly Gly Ser Gly His Cys Asp Cys Gln Ala Gly Tyr Gly Gly Glu	
175 180 185 190	
gcc tgt ggc cag tgt ggc ctt ggc tac ttt gag gca gaa cgc aac gcc	1285
Ala Cys Gly Gln Cys Gly Leu Gly Tyr Phe Glu Ala Glu Arg Asn Ala	
191 196 201 206	
agc cat ctg gta tgt tcg gct tgt ttt ggc ccc tgt gcc cga tgc tca	1333
Ser His Leu Val Cys Ser Ala Cys Phe Gly Pro Cys Ala Arg Cys Ser	
207 212 217 222	
gga cct gag gaa tca aac tgt ttg caa tgc aag aag ggc tgg gcc ctg	1381
Gly Pro Glu Glu Ser Asn Cys Leu Gln Cys Lys Lys Gly Trp Ala Leu	
223 228 233 238	
cat cac ctc aag tgt gta gac att gat gag tgt ggc aca gag gga gcc	1429
His His Leu Lys Cys Val Asp Ile Asp Glu Cys Gly Thr Glu Gly Ala	
239 244 249 254	
aac tgt gga gct gac caa ttc tgc gtg aac act gag ggc tcc tat gag	1477
Asn Cys Gly Ala Asp Gln Phe Cys Val Asn Thr Glu Gly Ser Tyr Glu	
255 260 265 270	
tgc cga gac tgt gcc aag gcc tgc cta ggc tgc atg ggg gca ggg cca	1525
Cys Arg Asp Cys Ala Lys Ala Cys Leu Gly Cys Met Gly Ala Gly Pro	
271 276 281 286	
ggt cgc tgt aag aag tgt agc cct ggc tat cag cag gtg ggc tcc aag	1573
Gly Arg Cys Lys Lys Cys Ser Pro Gly Tyr Gln Gln Val Gly Ser Lys	
287 292 297 302	
tgt ctc gat gtg gat gag tgt gag aca gag gtg tgt ccg gga gag aac	1621
Cys Leu Asp Val Asp Glu Cys Glu Thr Glu Val Cys Pro Gly Glu Asn	
303 308 313 318	
aag cag tgt gaa aac acc gag ggc ggt tat cgc tgc atc tgt gcc gag	1669
Lys Gln Cys Glu Asn Thr Glu Gly Gly Tyr Arg Cys Ile Cys Ala Glu	
319 324 329 334	
ggc tac aag cag atg gaa ggc atc tgt gtg aag gag cag atc cca gag	1717
Gly Tyr Lys Gln Met Glu Gly Ile Cys Val Lys Glu Gln Ile Pro Glu	
335 340 345 350	
tca gca ggc ttc ttc tca gag atg aca gaa gac gag ttg gtg gtg ctg	1765
Ser Ala Gly Phe Phe Ser Glu Met Thr Glu Asp Glu Leu Val Val Leu	
351 356 361 366	
cag cag atg ttc ttt ggc atc atc atc tgt gca ctg gcc acg ctg gct	1813
Gln Gln Met Phe Phe Gly Ile Ile Ile Cys Ala Leu Ala Thr Leu Ala	

367	372	377	382			
gct aag ggc gac ttg	gtg ttc acc gcc atc	ttc att ggg gct	gtg gcg	1861		
Ala Lys Gly Asp Leu	Val Phe Thr Ala Ile	Phe Ile Gly Ala	Val Ala			
383	388	393	398			
gcc atg act ggc tac	tgg ttg tca gag	cgc agt gac cgt	gtg ctg gag	1909		
Ala Met Thr Gly Tyr	Trp Leu Ser Glu Arg	Ser Asp Arg Val	Leu Glu			
399	404	409	414			
ggc ttc atc aag ggc	aga taa tc gcggccacca	cctgtaggac	ctcctccac	1962		
Gly Phe Ile Lys Gly	Arg *					
415	420					
ccacgctgcc	cccagagctt	gggctgccct	cctgctggac	actcaggaca	gcttggttta	2022
tttttgagag	tggggtaagc	accctacct	gccttacaga	gcagcccagg	taccaggcc	2082
cgggcagaca	aggccctgg	ggtaaaaagt	agccctgaag	gtggatacca	tgagctcttc	2142
acctggcggg	gactggcagg	cttcacaatg	tgtgaatttc	aaaagttttt	ccttaatggt	2202
ggctgctaga	gctttggccc	ctgcttagga	ttaggtggtc	ctcacagggg	tggggccatc	2262
acagctccct	cctgccagct	gcattgctgcc	agttcctggt	ctgtgttcac	cacatcccca	2322
cacccatttg	ccacttattt	attcatctca	ggaaataaag	aaaggtcttg	gaaagttaaa	2382
aaaaaaaa						2391

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 <212> DNA
 <213> Homo sapiens

<220>
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ccaggactcc	ctggtttaac 120
gcgttcccc ccatgtccta	gctgccctcc ctgtggcgtg
agccttcggc	ctggtgccgc 180
ccgtgccct tcttggtgt	gactctggtg gggttccgaa
ggccccctta	tgccccgcag 240
accctaccg acggcggcat	tacattctgg ggccacgagg
aggcactcat	cgtttcgttc 300
caaccgccgc caacggccct	ggccctcgcg agctctggaa
ctacagaggt	cgcacgcccg 360
ggcagtgagt gtgg	atg gct tgg cag
gtg agc ctg	ctg gag ctg
gag gag	gac 410
Met Ala Trp Gln	Val Ser Leu Leu Glu Leu Glu Asp

	1	5	10	
cgg. ctt cag tgt ccc atc tgc ctg gag gtc ttc aag gag tcc cta atg				458
Arg Leu Gln Cys Pro Ile Cys Leu Glu Val Phe Lys Glu Ser Leu Met				
13	18	23	28	
cta cag tgc ggc cac tcc tac tgc aag ggc tgc ctg gtt tcc ctg tcc				506
Leu Gln Cys Gly His Ser Tyr Cys Lys Gly Cys Leu Val Ser Leu Ser				
29	34	39	44	
tac cac ctg gac acc aag gtg cgc tgc ccc atg tgc tgg cag gtg gtg				554
Tyr His Leu Asp Thr Lys Val Arg Cys Pro Met Cys Trp Gln Val Val				
45	50	55	60	
gac ggc agc agc tcc ttg ccc aac gtc tcc ctg gcc tgg gtg atc gaa				602
Asp Gly Ser Ser Ser Leu Pro Asn Val Ser Leu Ala Trp Val Ile Glu				
61	66	71	76	
gcc ctg agg ctc cct ggg gac ccg gag ccc aag gtc tgc gtg cac cac				650
Ala Leu Arg Leu Pro Gly Asp Pro Glu Pro Lys Val Cys Val His His				
77	82	87	92	
cgg aac ccg ctc agc ctt ttc tgc gag aag gac cag gag ctc atc tgt				698
Arg Asn Pro Leu Ser Leu Phe Cys Glu Lys Asp Gln Glu Leu Ile Cys				
93	98	103	108	
ggc ctc tgc ggt ctg ctg ggc tcc cac caa cac cac ccg gtc acg ccc				746
Gly Leu Cys Gly Leu Leu Gly Ser His Gln His His Pro Val Thr Pro				
109	114	119	124	
gtc tcc acc gtc tgc agc cgc atg aag gag gag ctc gca gcc ctc ttc				794
Val Ser Thr Val Cys Ser Arg Met Lys Glu Glu Leu Ala Ala Leu Phe				
125	130	135	140	
tct gag ctg aag cag gag cag aag aag gtg gat gag ctc atc gcc aaa				842
Ser Glu Leu Lys Gln Glu Gln Lys Lys Val Asp Glu Leu Ile Ala Lys				
141	146	151	156	
ctg gtg aaa aac ccg acc cga atc gtc aat gag tgc gat gtc ttc agc				890
Leu Val Lys Asn Arg Thr Arg Ile Val Asn Glu Ser Asp Val Phe Ser				
157	162	167	172	
tgg gtg atc cgc cgc gag ttc cag gag ctg cgc cac ccg gtg gac gag				938
Trp Val Ile Arg Arg Glu Phe Gln Glu Leu Arg His Pro Val Asp Glu				
173	178	183	188	
gag aag gcc cgc tgc ctg gag ggg ata ggg ggt cac acc cgt ggc ctg				986
Glu Lys Ala Arg Cys Leu Glu Gly Ile Gly Gly His Thr Arg Gly Leu				
189	194	199	204	
gtg gcc tcc ctg gac atg cag ctg gag cag gcc cag gga acc ccg gag				1034
Val Ala Ser Leu Asp Met Gln Leu Glu Gln Ala Gln Gly Thr Arg Glu				
205	210	215	220	
cgg ctg gcc caa gcc gag tgt gtg ctg gaa cag ttc ggc aat gag gac				1082
Arg Leu Ala Gln Ala Glu Cys Val Leu Glu Gln Phe Gly Asn Glu Asp				
221	226	231	236	

80

85

90

gataggtcat cccagaccaa gatatgcaag agaagccaca acctgctgca attgggcatc 592
 aaacacatat ggtcgtcata aataaatcat atcctgttct caaaaaaaaaaaa aaa 645

<210> 951

<211> 1169

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (258) .. (821)

<400> 951

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 gggaataagc ttgcggccgc agttcccagg cgtctgcggg cgcgagcacg ccgcgaccct 120
 gcgtgcgccg gggcgggggg gcggggcctc gcctgcacaa atggggacga ggggggcggg 180
 gcggccacaa tttcgcgcca aacttgaccg cgcgttctgc tgtaacgagc gggctcggag 240
 gtcctcccg tgcgtgc atg gtt ggt tcg cta aac tgc atc gtc gct gtg 290
 Met Val Gly Ser Leu Asn Cys Ile Val Ala Val
 1 5
 tcc cag aac atg ggc atc ggc aag aac ggg gac ctg ccc tgg cca ccg 338
 Ser Gln Asn Met Gly Ile Gly Lys Asn Gly Asp Leu Pro Trp Pro Pro
 12 17 22 27
 ctc agg aat gaa ttc aga tat ttc cag aga atg acc aca acc tct tca 386
 Leu Arg Asn Glu Phe Arg Tyr Phe Gln Arg Met Thr Thr Thr Ser Ser
 28 33 38 43
 gta gaa ggt aaa cag aat ctg gtg att atg ggt aag aag acc tgg ttc 434
 Val Glu Gly Lys Gln Asn Leu Val Ile Met Gly Lys Lys Thr Trp Phe
 44 49 54 59
 tcc att cct gag aag aat cga cct tta aag ggt aga att aat tta gtt 482
 Ser Ile Pro Glu Lys Asn Arg Pro Leu Lys Gly Arg Ile Asn Leu Val
 60 65 70 75
 ctc agc aga gaa ctc aag gaa cct cca caa gga gct cat ttt ctt tcc 530
 Leu Ser Arg Glu Leu Lys Glu Pro Pro Gln Gly Ala His Phe Leu Ser
 76 81 86 91
 aga agt cta gat gat gcc tta aaa ctt act gaa caa cca gaa tta gca 578
 Arg Ser Leu Asp Asp Ala Leu Lys Leu Thr Glu Gln Pro Glu Leu Ala
 92 97 102 107
 aat aaa gta gac atg gtc tgg ata gtt ggt ggc agt tct gtt tat aag 626
 Asn Lys Val Asp Met Val Trp Ile Val Gly Gly Ser Ser Val Tyr Lys

108	113	118	123	
gaa gcc atg aat cac cca ggc cat ctt aaa cta ttt gtg aca agg atc				674
Glu Ala Met Asn His Pro Gly His Leu Lys Leu Phe Val Thr Arg Ile				
124	129	134	139	
atg caa gac ttt gaa agt gac acg ttt ttt cca gaa att gat ttg gag				722
Met Gln Asp Phe Glu Ser Asp Thr Phe Phe Pro Glu Ile Asp Leu Glu				
140	145	150	155	
aaa tat aaa ctt ctg cca gaa tac cca ggt gtt ctc tct gat gtc cag				770
Lys Tyr Lys Leu Leu Pro Glu Tyr Pro Gly Val Leu Ser Asp Val Gln				
156	161	166	171	
gag gag aaa ggc att aag tac aaa ttt gaa gta tat gag aag aat gat				818
Glu Glu Lys Gly Ile Lys Tyr Lys Phe Glu Val Tyr Glu Lys Asn Asp				
172	177	182	187	

taa tatg aaggtgtttt ctagttaaag ttgttcccc tccctctgaa aaaagtatgt	875
*	
188	
atttttacat tagaaaaggt tttttgttga ctttagatct ataattatatt ctaagcaact	935
agtttttatt cccactact cttgtctcta tcagatacca tttatgagac attcttgcta	995
taactaagtg cttctccaag accccaactg agtccccagc acctgctaca gtgagctgcc	1055
attccacacc catcacatgt ggcactcttg ccagtccttg acattgtcgg gcttttcaca	1115
tgttggtaat atttattaaa gatgaagatc cacataccct tcaaaaaaaaa aaaa	1169

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 <211> 2114
 <212> DNA
 <213> Homo sapiens

<220>
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aagcaggctg gtaccgggtcc ggaattcccc ggatatcgtc gaccacgcg tccgcggacg	120
cgagg atg gcg gcg gag aac gag gcc agc cag gag agc gcc ctg ggc	167
Met Ala Ala Glu Asn Glu Ala Ser Gln Glu Ser Ala Leu Gly	
1 5 10	
gcc tac tcg cca gtg gac tac atg agc atc acc agc ttc ccg cgg ctg	215
Ala Tyr Ser Pro Val Asp Tyr Met Ser Ile Thr Ser Phe Pro Arg Leu	
15 20 25 30	

ccc gag gac gag ccg gcg ccc gcg gcc ccg ctg agg ggc cgc aag gac	263
Pro Glu Asp Glu Pro Ala Pro Ala Ala Pro Leu Arg Gly Arg Lys Asp	
31 36 41 46	
gag gac gcc ttt ctg gga gac ccc gac acc gac ccg gac tcc ttc ctg	311
Glu Asp Ala Phe Leu Gly Asp Pro Asp Thr Asp Pro Asp Ser Phe Leu	
47 52 57 62	
aag tct gca cgg ctg cag cgg ctg cca tcc tcc tcc tcc gag atg ggc	359
Lys Ser Ala Arg Leu Gln Arg Leu Pro Ser Ser Ser Ser Glu Met Gly	
63 68 73 78	
agc caa gac ggg tcc ccg cta cgc gag acg cgc aaa gac ccg ttc tcc	407
Ser Gln Asp Gly Ser Pro Leu Arg Glu Thr Arg Lys Asp Pro Phe Ser	
79 84 89 94	
gcc gca gcg gcc gag tgc tcc tgc cgc cag gat ggg ctc acg gtc atc	455
Ala Ala Ala Ala Glu Cys Ser Cys Arg Gln Asp Gly Leu Thr Val Ile	
95 100 105 110	
gtc acg gcc tgt ctc acc ttc gct acc ggt gtc acc gtg gcg ctg gtc	503
Val Thr Ala Cys Leu Thr Phe Ala Thr Gly Val Thr Val Ala Leu Val	
111 116 121 126	
atg cag atc tac ttc ggg gac ccc cag atc ttc cag cag ggt gcc gtg	551
Met Gln Ile Tyr Phe Gly Asp Pro Gln Ile Phe Gln Gln Gly Ala Val	
127 132 137 142	
gtg acc gat gct gcc cgc tgc act tca ctg ggc atc gag gtg ctc agt	599
Val Thr Asp Ala Ala Arg Cys Thr Ser Leu Gly Ile Glu Val Leu Ser	
143 148 153 158	
aaa cag gga tct tct gtg gac gca gcg gtg gca gca gcc ttg tgt ttg	647
Lys Gln Gly Ser Ser Val Asp Ala Ala Val Ala Ala Ala Leu Cys Leu	
159 164 169 174	
ggt atc gtg gct cca cac agt tct ggc ctg ggc ggt ggg ggc gtg atg	695
Gly Ile Val Ala Pro His Ser Ser Gly Leu Gly Gly Gly Gly Val Met	
175 180 185 190	
ctg gta cat gac atc cga cga aat gag agc cac cta att gat ttc cgg	743
Leu Val His Asp Ile Arg Arg Asn Glu Ser His Leu Ile Asp Phe Arg	
191 196 201 206	
gag tcc gca cca ggg gcc ctc agg gaa gag acc ctg caa aga tcc tgg	791
Glu Ser Ala Pro Gly Ala Leu Arg Glu Glu Thr Leu Gln Arg Ser Trp	
207 212 217 222	
gag acc aag cct ggg ctc ttg gtg ggg gtt ccc gga atg gtg aag ggg	839
Glu Thr Lys Pro Gly Leu Leu Val Gly Val Pro Gly Met Val Lys Gly	
223 228 233 238	
cta cat gaa gct cac cag ctc tat ggc agg ctg cca tgg tcc caa gtc	887
Leu His Glu Ala His Gln Leu Tyr Gly Arg Leu Pro Trp Ser Gln Val	
239 244 249 254	
ctg gcc ttt gca gca gct gtg gcc caa gat ggc ttc aac gtg act cat	935

Leu Ala Phe Ala Ala Ala Val Ala Gln Asp Gly Phe Asn Val Thr His	
255 260 265 270	
gat cta gcc cgt gcc ctg gct gaa cag ctg cca ccc aac atg tcc gag	983
Asp Leu Ala Arg Ala Leu Ala Glu Gln Leu Pro Pro Asn Met Ser Glu	
271 276 281 286	
cgc ttc cgg gag acg ttc ctg cca tcg ggc cgc ccg cca cta cct ggc	1031
Arg Phe Arg Glu Thr Phe Leu Pro Ser Gly Arg Pro Pro Leu Pro Gly	
287 292 297 302	
tcg ttg ctg cat cgg ccc gac ctg gct gag gtg ctg gat gta ctt ggc	1079
Ser Leu Leu His Arg Pro Asp Leu Ala Glu Val Leu Asp Val Leu Gly	
303 308 313 318	
acc tcc ggc ccg gct gcc ttc tac gca ggt ggc aac ctc aca ctg gag	1127
Thr Ser Gly Pro Ala Ala Phe Tyr Ala Gly Gly Asn Leu Thr Leu Glu	
319 324 329 334	
atg gtg gcc gag gct cag cac gca ggg ggt gtc ata acc gaa gag gac	1175
Met Val Ala Glu Ala Gln His Ala Gly Gly Val Ile Thr Glu Glu Asp	
335 340 345 350	
ttc agc aat tac agc gcc ctt gtg gag aag cct gtg tgt ggc gtg tac	1223
Phe Ser Asn Tyr Ser Ala Leu Val Glu Lys Pro Val Cys Gly Val Tyr	
351 356 361 366	
aga ggc cac ctg gtt ctt agt ccc cca cct ccg cac acg ggc cct gcc	1271
Arg Gly His Leu Val Leu Ser Pro Pro Pro Pro His Thr Gly Pro Ala	
367 372 377 382	
ctc atc agt gct ctc aac atc ctg gag ggc ttc aat ctc acc agc ctg	1319
Leu Ile Ser Ala Leu Asn Ile Leu Glu Gly Phe Asn Leu Thr Ser Leu	
383 388 393 398	
gta tcc cga gaa cag gct ctt cac tgg gtg gca gag acc ctg aag att	1367
Val Ser Arg Glu Gln Ala Leu His Trp Val Ala Glu Thr Leu Lys Ile	
399 404 409 414	
gca tta gcc ctg gcc agc aga ctg gga gat ccc gtc tat gat tct acc	1415
Ala Leu Ala Leu Ala Ser Arg Leu Gly Asp Pro Val Tyr Asp Ser Thr	
415 420 425 430	
atc act gag agc atg gat gac atg ctc agc aag gtg gag gcc gcc tac	1463
Ile Thr Glu Ser Met Asp Asp Met Leu Ser Lys Val Glu Ala Ala Tyr	
431 436 441 446	
ctc cgg ggc cat atc aat gac tcc cag gca gcc cct gcc cca ctc ctg	1511
Leu Arg Gly His Ile Asn Asp Ser Gln Ala Ala Pro Ala Pro Leu Leu	
447 452 457 462	
cct gtc tat gaa cta gac gga gct ccc acg gct gcc cag gtg ctg atc	1559
Pro Val Tyr Glu Leu Asp Gly Ala Pro Thr Ala Ala Gln Val Leu Ile	
463 468 473 478	
atg gga cct gat gac ttc att gtg gcc atg gtt agc tcc ctg aac cag	1607
Met Gly Pro Asp Asp Phe Ile Val Ala Met Val Ser Ser Leu Asn Gln	

479	484	489	494	
ccc ttt ggc agc ggc ctt atc acc ccc tcg ggg atc ctg ctc aac agc				1655
Pro Phe Gly Ser Gly Leu Ile Thr Pro Ser Gly Ile Leu Leu Asn Ser				
495	500	505	510	
cag atg ctg gac ttc tcc tgg ccc aac cgg aca gct aac cac tct gca				1703
Gln Met Leu Asp Phe Ser Trp Pro Asn Arg Thr Ala Asn His Ser Ala				
511	516	521	526	
ccc agc ctg gag aat tca gtg cag cca ggg aag cgg cca ctc tct ttc				1751
Pro Ser Leu Glu Asn Ser Val Gln Pro Gly Lys Arg Pro Leu Ser Phe				
527	532	537	542	
ctg ctg ccc aca gtg gtc cga ccc gcg gag ggg ctc tgt gga acc tac				1799
Leu Leu Pro Thr Val Val Arg Pro Ala Glu Gly Leu Cys Gly Thr Tyr				
543	548	553	558	
ctc gct ctg ggg gcc aat gga gct gcg cgg ggc ctc agc ggc ctg aca				1847
Leu Ala Leu Gly Ala Asn Gly Ala Ala Arg Gly Leu Ser Gly Leu Thr				
559	564	569	574	
cag gtt ctg ctg aat gtc ctg acc ttg aac cgg aac ctg agt gac agc				1895
Gln Val Leu Leu Asn Val Leu Thr Leu Asn Arg Asn Leu Ser Asp Ser				
575	580	585	590	
ctg gcc cgc ggc cgc cta cac ccg gac ctg cag tcc aac ctc ctg cag				1943
Leu Ala Arg Gly Arg Leu His Pro Asp Leu Gln Ser Asn Leu Leu Gln				
591	596	601	606	
gtg gac agt gag ttc aca gag gaa gag att gag ttc ctg gaa gcc agg				1991
Val Asp Ser Glu Phe Thr Glu Glu Glu Ile Glu Phe Leu Glu Ala Arg				
607	612	617	622	
ggt cac cac gtg gag aaa gta gat gtc tta tcc tgg gtc cat ggc agc				2039
Gly His His Val Glu Lys Val Asp Val Leu Ser Trp Val His Gly Ser				
623	628	633	638	
cga agg acc aac aac ttc atc atc gct gtt aag gac cct cgg agc cca				2087
Arg Arg Thr Asn Asn Phe Ile Ile Ala Val Lys Asp Pro Arg Ser Pro				
639	644	649	654	
gat gca gct gga gcc acc atc ctg tag				2114
Asp Ala Ala Gly Ala Thr Ile Leu *				
655	660			

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 <213> Homo, sapiens

<220>
 <221> CDS

<222> (75) .. (779)

<400> 953

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cggccgggcgc gggc atg ggg agg gcc ggc gcc gcg gcc aac ggc acc ccg	110
Met Gly Arg Ala Gly Ala Ala Ala Asn Gly Thr Pro	
1 5 10	
cag aac gtc cag ggc atc acc tcc tac cag cag cgt tta caa gca ttg	158
Gln Asn Val Gln Gly Ile Thr Ser Tyr Gln Gln Arg Leu Gln Ala Leu	
13 18 23 28	
aga aag gag aaa tcc cga gat gct gct cgc tcc cgc cgg gga aaa gaa	206
Arg Lys Glu Lys Ser Arg Asp Ala Ala Arg Ser Arg Arg Gly Lys Glu	
29 34 39 44	
aac ttt gag ttc tat gaa ttg gcc aag ttg ttg cct ctt cct gca gcc	254
Asn Phe Glu Phe Tyr Glu Leu Ala Lys Leu Leu Pro Leu Pro Ala Ala	
45 50 55 60	
att acc agc cag ctc gac aag gca tcc atc att cga ctt aca att agc	302
Ile Thr Ser Gln Leu Asp Lys Ala Ser Ile Ile Arg Leu Thr Ile Ser	
61 66 71 76	
tat ctg aaa atg agg gac ttt gct aac cag ggg gac cct ccg tgg aac	350
Tyr Leu Lys Met Arg Asp Phe Ala Asn Gln Gly Asp Pro Pro Trp Asn	
77 82 87 92	
ttg cga atg gaa ggc cct cca cct aac aca tca gta aaa gtt ata ggt	398
Leu Arg Met Glu Gly Pro Pro Pro Asn Thr Ser Val Lys Val Ile Gly	
93 98 103 108	
gca cag cga agg aga agc ccc agt gca cta gcc att gaa gta ttt gaa	446
Ala Gln Arg Arg Arg Ser Pro Ser Ala Leu Ala Ile Glu Val Phe Glu	
109 114 119 124	
gca cat ttg gga agc cac att ttg cag tcc ctg gat ggc ttt gta ttt	494
Ala His Leu Gly Ser His Ile Leu Gln Ser Leu Asp Gly Phe Val Phe	
125 130 135 140	
gca cta aat cag gaa gga aaa ttt ttg tac att tcc gaa aca gtc tcc	542
Ala Leu Asn Gln Glu Gly Lys Phe Leu Tyr Ile Ser Glu Thr Val Ser	
141 146 151 156	
atc tac cta ggc ctc tca caa gtg gag ctg aca ggc agc agt gtc ttt	590
Ile Tyr Leu Gly Leu Ser Gln Val Glu Leu Thr Gly Ser Ser Val Phe	
157 162 167 172	
gac tat gtc cac ccc gga gat cac gtg gag atg gct gag cag ctg ggc	638
Asp Tyr Val His Pro Gly Asp His Val Glu Met Ala Glu Gln Leu Gly	
173 178 183 188	
atg aag ctc ccc cct ggg cgg ggt ctc ctg tca cag ggc act gct gag	686
Met Lys Leu Pro Pro Gly Arg Gly Leu Leu Ser Gln Gly Thr Ala Glu	
189 194 199 204	

gac gga gcc agc tca gca tct tcc tcc tct cag tcg gag acc ccc gag 734
 Asp Gly Ala Ser Ser Ala Ser Ser Ser Ser Gln Ser Glu Thr Pro Glu
 205 210 215 220

cca gtg gtt tgc ttc cca cca gcg agt gat cag ttt ctt ctg tag gac 782
 Pro Val Val Cys Phe Pro Pro Ala Ser Asp Gln Phe Leu Leu *
 221 226 231

ccctgtcagg aagaacatgc ctggatccta cttcagagag aactcagcca gggcaagggg 842

ctcctgtggc tttttgggtg ggtgtgagtt catagagggg aaatcaatac tgtaccagga 902

tttagacaat ttagcaaaat gcacgaggca gtacttttga tgatgaataa ctacagctgc 962

atggctaacc cattggttgt gtaaagtatg ggttatcatg ttttgtctaa attttcaggc 1022

aaaatctagc ctgttttgtg gcattaggat catcattata gtagtatgat ttttatgcta 1082

ttatacttac gctatgtccc gaatgttttt aaggccagca aaatggaaac agtagagtac 1142

ttgcctgaat gcaaataaac ttcagtttca acttaaaaga caaggaggga agaaaccctt 1202

gtgccgaatc tcatgtcgag ggcaactcct at 1234

<210> 954

<211> 641

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (103) .. (360)

<400> 954

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caagaagaga ccgaggcggg tggccccgag agagccaggg cc atg gag gcc aac 114
 Met Glu Ala Asn
 1

atg ccg aag cgg aag gag cct ggc agg tct ctc cgc atc aaa gtc atc 162
 Met Pro Lys Arg Lys Glu Pro Gly Arg Ser Leu Arg Ile Lys Val Ile
 5 10 15 20

tcc atg ggc aac gcc gaa gtg ggg aaa agc tgt att ata aag cga tac 210
 Ser Met Gly Asn Ala Glu Val Gly Lys Ser Cys Ile Ile Lys Arg Tyr
 21 26 31 36

tgt gag aaa aga ttt gtg tct aaa tac ctg gca aca att gga att gac 258
 Cys Glu Lys Arg Phe Val Ser Lys Tyr Leu Ala Thr Ile Gly Ile Asp
 37 42 47 52

tat gga gtc aca aag gta cac gtc aga gac aga gaa atc aaa gtt aac 306
 Tyr Gly Val Thr Lys Val His Val Arg Asp Arg Glu Ile Lys Val Asn

53	58	63	68	
atc ttt gat atg gct gga cat ccc ttc ttc tat gag gta aga aag cct				354
Ile Phe Asp Met Ala Gly His Pro Phe Phe Tyr Glu Val Arg Lys Pro				
69	74	79	84	
ttt tga caaaacctat atccagtatt gttggtggtt tggggagaga tccagaatta				410
Phe *				
85				
tatgaaacaa ccaatattga tatcatgtgt aaaattgcat aatttttagct tgatcgtggc				470
ttgccttcag agccttgagt taatagacaa ctgttgattt tttagggttat cctgtttaat				530
agtggtagga aatttcattg ccaatatttc aaacatttca ataagacatt ttgactttca				590
gaggactttt gctttttacc tcatacttta gcctaaaatg tgaaaaaaaa a				641

<210> 955
 <211> 1884
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (69)..(1700)

<400> 955	
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tatatgcc atg tat gtt cgc cag act gta ctt aaa gtt atc aaa ttc cta	110
Met Tyr Val Arg Gln Thr Val Leu Lys Val Ile Lys Phe Leu	
1 5 10	
atc atc att gca tat aat agt gct ctg gtt tcc aag gtc cag ttt aca	158
Ile Ile Ile Ala Tyr Asn Ser Ala Leu Val Ser Lys Val Gln Phe Thr	
15 20 25 30	
gtg gac tgt aat gtg gac att cag gac atg act gga tat aaa aac ttt	206
Val Asp Cys Asn Val Asp Ile Gln Asp Met Thr Gly Tyr Lys Asn Phe	
31 36 41 46	
tct tgc aat cat acc atg gca cac ttg ttc tca aaa ctg tcc ttt tgc	254
Ser Cys Asn His Thr Met Ala His Leu Phe Ser Lys Leu Ser Phe Cys	
47 52 57 62	
tat ctg tgc ttt gtt agt atc tat gga ttg acg tgc ctt tat acc tta	302
Tyr Leu Cys Phe Val Ser Ile Tyr Gly Leu Thr Cys Leu Tyr Thr Leu	
63 68 73 78	
tac tgg ctg ttc tac cgt tct cta cgg gaa tat tcc ttt gag tat gtc	350
Tyr Trp Leu Phe Tyr Arg Ser Leu Arg Glu Tyr Ser Phe Glu Tyr Val	
79 84 89 94	

cgt cag gag act gga ttt gat gat att cca gat gtg aaa aat gac ttt	398
Arg Gln Glu Thr Gly Phe Asp Asp Ile Pro Asp Val Lys Asn Asp Phe	
95 100 105 110	
gct ttt atg ctt cat atg ata gat cag tat gac cct ctc tat tcc aag	446
Ala Phe Met Leu His Met Ile Asp Gln Tyr Asp Pro Leu Tyr Ser Lys	
111 116 121 126	
aga ttt gca gtg ttc ctg tct gaa gtc agt gaa aac aaa tta aag cag	494
Arg Phe Ala Val Phe Leu Ser Glu Val Ser Glu Asn Lys Leu Lys Gln	
127 132 137 142	
ctg aac tta aat aac gaa tgg act cct gat aaa ctg agg cag aag cta	542
Leu Asn Leu Asn Asn Glu Trp Thr Pro Asp Lys Leu Arg Gln Lys Leu	
143 148 153 158	
cag aca aat gcc cat aat cga ctg gaa ttg cct ctt atc atg ctc tct	590
Gln Thr Asn Ala His Asn Arg Leu Glu Leu Pro Leu Ile Met Leu Ser	
159 164 169 174	
ggc ctt cca gac act gtt ttt gaa atc aca gag ttg caa tct cta aaa	638
Gly Leu Pro Asp Thr Val Phe Glu Ile Thr Glu Leu Gln Ser Leu Lys	
175 180 185 190	
ctt gaa atc att aag aac gta atg ata cca gcc acc att gca cag cta	686
Leu Glu Ile Ile Lys Asn Val Met Ile Pro Ala Thr Ile Ala Gln Leu	
191 196 201 206	
gac aat ctt caa gag ctc tct ctg cac cag tgt tct gtc aaa atc cac	734
Asp Asn Leu Gln Glu Leu Ser Leu His Gln Cys Ser Val Lys Ile His	
207 212 217 222	
agt gcg gcg ctc tct ttc ctg aag gaa aac ctc aag gtc ttg agc gtc	782
Ser Ala Ala Leu Ser Phe Leu Lys Glu Asn Leu Lys Val Leu Ser Val	
223 228 233 238	
aag ttt gat gac atg agg gaa ctc ccc ccc tgg atg tat ggg ctc cga	830
Lys Phe Asp Asp Met Arg Glu Leu Pro Pro Trp Met Tyr Gly Leu Arg	
239 244 249 254	
aat ctg gaa gag ctg tac cta gtt ggc tct cta agt cat gat att tcc	878
Asn Leu Glu Glu Leu Tyr Leu Val Gly Ser Leu Ser His Asp Ile Ser	
255 260 265 270	
aga aat gtc acc ctt gag tct ctg cgg gat ctc aaa agc ctt aaa att	926
Arg Asn Val Thr Leu Glu Ser Leu Arg Asp Leu Lys Ser Leu Lys Ile	
271 276 281 286	
ctc tct atc aaa agc aac gtt tcc aaa atc cct cag gca gtg gtt gat	974
Leu Ser Ile Lys Ser Asn Val Ser Lys Ile Pro Gln Ala Val Val Asp	
287 292 297 302	
gtt tcc agc cat ctc cag aag atg tgc ata cat aat gat ggc acc aag	1022
Val Ser Ser His Leu Gln Lys Met Cys Ile His Asn Asp Gly Thr Lys	
303 308 313 318	
ctg gtg atg ctc aac aac tta aag aag atg acc aat ctg aca gag ctg	1070

Leu Val Met Leu Asn Asn Leu Lys Lys Met Thr Asn Leu Thr Glu Leu	
319 324 329 334	
gag ctg gtc cac tgt gac ctg gag cgt att cct cat gct gtg ttc agc	1118
Glu Leu Val His Cys Asp Leu Glu Arg Ile Pro His Ala Val Phe Ser	
335 340 345 350	
cta ctc agc ctc cag gaa ttg gac ctg aag gaa aac aat ctg aaa tct	1166
Leu Leu Ser Leu Gln Glu Leu Asp Leu Lys Glu Asn Asn Leu Lys Ser	
351 356 361 366	
ata gaa gaa atc gtt agc ttt cag cac tta aga aag ttg aca gtg cta	1214
Ile Glu Glu Ile Val Ser Phe Gln His Leu Arg Lys Leu Thr Val Leu	
367 372 377 382	
aaa ctg tgg cat aac agc atc acc tac atc cca gag cat ata aag aaa	1262
Lys Leu Trp His Asn Ser Ile Thr Tyr Ile Pro Glu His Ile Lys Lys	
383 388 393 398	
ctc acc agc ctg gaa cgc ctg tcc ttt agt cac aat aaa ata gag gtg	1310
Leu Thr Ser Leu Glu Arg Leu Ser Phe Ser His Asn Lys Ile Glu Val	
399 404 409 414	
ctg cct tcc cac ctc ttc cta tgc aac aag atc cga tac ttg gac tta	1358
Leu Pro Ser His Leu Phe Leu Cys Asn Lys Ile Arg Tyr Leu Asp Leu	
415 420 425 430	
tcg tac aat gac att cga ttt atc ccc cct gaa att gga gtt cta caa	1406
Ser Tyr Asn Asp Ile Arg Phe Ile Pro Pro Glu Ile Gly Val Leu Gln	
431 436 441 446	
agt tta cag tat ttt tcc atc aca tgt aac aaa gtg gaa agc ctt cca	1454
Ser Leu Gln Tyr Phe Ser Ile Thr Cys Asn Lys Val Glu Ser Leu Pro	
447 452 457 462	
gat gaa ctc tac ttc tgc aag aaa ctt aaa act ctg aag att gga aaa	1502
Asp Glu Leu Tyr Phe Cys Lys Lys Leu Lys Thr Leu Lys Ile Gly Lys	
463 468 473 478	
aac agc cta tct gta ctt tca ccg aaa att gga aat ttg cta ttt ctt	1550
Asn Ser Leu Ser Val Leu Ser Pro Lys Ile Gly Asn Leu Leu Phe Leu	
479 484 489 494	
tcc tac tta gat gta aaa ggt aat cac ttt gaa atc ctc cct cct gaa	1598
Ser Tyr Leu Asp Val Lys Gly Asn His Phe Glu Ile Leu Pro Pro Glu	
495 500 505 510	
ctg ggt gac tgt cgg gct ctg aag cga gct ggt tta gtt gta gaa gat	1646
Leu Gly Asp Cys Arg Ala Leu Lys Arg Ala Gly Leu Val Val Glu Asp	
511 516 521 526	
gct ctg ttt gaa act ctg cct tct gac gtc cgg gag caa atg aaa aca	1694
Ala Leu Phe Glu Thr Leu Pro Ser Asp Val Arg Glu Gln Met Lys Thr	
527 532 537 542	
gaa taa cttatttttc gttaaagttt gactgaaaca cgcttctacc aaatacagta	1750
Glu *	

543

taaataatta ggtagtctta atgcctttcc tttttttttt tcctttttcac acaaaatgta 1810
 cacaaagatc gcgtaaggag tatgtatttt taataaaaaat ttaattgtat tttttcaata 1870
 ttataaaaaa aaaa 1884

<210> 956
 <211> 1508
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (476) .. (1378)

<400> 956

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 agaaacgctg gggcgcccac cctggcagac taacgaagca gctcccttcc caccccaact 180
 gcaggtctaa ttttggacgc tttgcctgcc atttcttcca gggtgagggg gccgcagagg 240
 cggaggctcg cgtattcctg cagtcagcac ccacgtcgcc cccggacgct cgggtgctcag 300
 gcccttcgcy agcggggctc tccgtctgcy gtccttctgt aaggctctgg gcggctgcag 360
 aggccggccg tccggtttgg ctcacctctc ccaggaaaact tcacactgga gagccaaaag 420
 gagtggaaga gcctgtcttg gagattttcc tggggaaatc ctgaggtcat tcatt atg 478
 Met
 1

aag tgt acc gcg cgg gag tgg ctc aga gta acc aca gtg ctg ttc atg 526
 Lys Cys Thr Ala Arg Glu Trp Leu Arg Val Thr Thr Val Leu Phe Met
 2 7 12 17

gct aga gca att cca gcc atg gtg gtt ccc aat gcc act tta ttg gag 574
 Ala Arg Ala Ile Pro Ala Met Val Val Pro Asn Ala Thr Leu Leu Glu
 18 23 28 33

aaa ctt ttg gaa aaa tac atg gat gag gat ggt gag tgg tgg ata gcc 622
 Lys Leu Leu Glu Lys Tyr Met Asp Glu Asp Gly Glu Trp Trp Ile Ala
 34 39 44 49

aaa caa cga ggg aaa agg gcc atc aca gac aat gac atg cag agt att 670
 Lys Gln Arg Gly Lys Arg Ala Ile Thr Asp Asn Asp Met Gln Ser Ile
 50 55 60 65

ttg gac ctt cat aat aaa tta cga agt cag gtg tat cca aca gcc tct 718
 Leu Asp Leu His Asn Lys Leu Arg Ser Gln Val Tyr Pro Thr Ala Ser

66	71	76	81	
aat atg gag tat atg aca tgg gat gta gag ctg gaa aga tct gca gaa				766
Asn Met Glu Tyr Met Thr Trp Asp Val Glu Leu Glu Arg Ser Ala Glu				
82	87	92	97	
tcc tgg gct gaa agt tgc ttg tgg gaa cat gga cct gca agc ttg ctt				814
Ser Trp Ala Glu Ser Cys Leu Trp Glu His Gly Pro Ala Ser Leu Leu				
98	103	108	113	
cca tca att gga cag aat ttg gga gca cac tgg gga aga tat agg ccc				862
Pro Ser Ile Gly Gln Asn Leu Gly Ala His Trp Gly Arg Tyr Arg Pro				
114	119	124	129	
ccg acg ttt cat gta caa tcg tgg tat gat gaa gtg aaa gac ttt agc				910
Pro Thr Phe His Val Gln Ser Trp Tyr Asp Glu Val Lys Asp Phe Ser				
130	135	140	145	
tac cca tat gaa cat gaa tgc aac cca tat tgt cca ttc agg tgt tct				958
Tyr Pro Tyr Glu His Glu Cys Asn Pro Tyr Cys Pro Phe Arg Cys Ser				
146	151	156	161	
ggc cct gta tgt aca cat tat aca cag gtc gtg tgg gca act agt aac				1006
Gly Pro Val Cys Thr His Tyr Thr Gln Val Val Trp Ala Thr Ser Asn				
162	167	172	177	
aga atc ggt tgt gcc att aat ttg tgt cat aac atg aac atc tgg ggg				1054
Arg Ile Gly Cys Ala Ile Asn Leu Cys His Asn Met Asn Ile Trp Gly				
178	183	188	193	
cag ata tgg ccc aaa gct gtc tac ctg gtg tgc aat tac tcc cca aag				1102
Gln Ile Trp Pro Lys Ala Val Tyr Leu Val Cys Asn Tyr Ser Pro Lys				
194	199	204	209	
gga aac tgg tgg ggc cat gcc cct tac aaa cat ggg cgg ccc tgt tct				1150
Gly Asn Trp Trp Gly His Ala Pro Tyr Lys His Gly Arg Pro Cys Ser				
210	215	220	225	
gct tgc cca cct agt ttt gga ggg ggc tgt aga gaa aat ctg tgc tac				1198
Ala Cys Pro Pro Ser Phe Gly Gly Gly Cys Arg Glu Asn Leu Cys Tyr				
226	231	236	241	
aaa gaa ggg tca gac agg tat tat ccc cct cga gaa gag gaa aca aat				1246
Lys Glu Gly Ser Asp Arg Tyr Tyr Pro Pro Arg Glu Glu Glu Thr Asn				
242	247	252	257	
gaa ata gaa cga cag cag tca caa gtc cat gac acc cat gtc cgg aca				1294
Glu Ile Glu Arg Gln Gln Ser Gln Val His Asp Thr His Val Arg Thr				
258	263	268	273	
aga tca gat gat agt agc aga aat gaa gtc att agc ttt ggg aaa agt				1342
Arg Ser Asp Asp Ser Ser Arg Asn Glu Val Ile Ser Phe Gly Lys Ser				
274	279	284	289	
aat gaa aat ata atg gtt tta gaa atc ctg tgt taa atat tgctatatatt				1392
Asn Glu Asn Ile Met Val Leu Glu Ile Leu Cys *				
290	295	300		

Glu Ala Arg Tyr Tyr Leu Val Gln Gly Leu Ile Glu Asp Cys Gln Leu	
120 125 130 135	
gcg ctg cag caa aaa agg gag acg ctg tcc ccg ctg tgc ctc atc ccc	665
Ala Leu Gln Gln Lys Arg Glu Thr Leu Ser Pro Leu Cys Leu Ile Pro	
136 141 146 151	
atg gtg aca tct ccc cgg gag gag cag cag ctc ctg gcc agc acc tcc	713
Met Val Thr Ser Pro Arg Glu Glu Gln Gln Leu Leu Ala Ser Thr Ser	
152 157 162 167	
aag ccc gtg gtg aag ctc ctg cac aac cgc agt aac aac aag tac tcc	761
Lys Pro Val Val Lys Leu Leu His Asn Arg Ser Asn Asn Lys Tyr Ser	
168 173 178 183	
tac acc agc act tca gat gac aac cta ctt aag aac atc gag ctg ttc	809
Tyr Thr Ser Thr Ser Asp Asp Asn Leu Leu Lys Asn Ile Glu Leu Phe	
184 189 194 199	
gac aag ctg gcc ctg cgc ttc cac ggg cgg cta ctc ttc ctc aag gat	857
Asp Lys Leu Ala Leu Arg Phe His Gly Arg Leu Leu Phe Leu Lys Asp	
200 205 210 215	
gtc ctg ggg gac gag atc tgc tgc tgg tct ttc tac ggg cag ggc cgc	905
Val Leu Gly Asp Glu Ile Cys Cys Trp Ser Phe Tyr Gly Gln Gly Arg	
216 221 226 231	
aaa atc gcc gag gtg tgc tgc acc tcc att gtc tat gct acg gag aag	953
Lys Ile Ala Glu Val Cys Cys Thr Ser Ile Val Tyr Ala Thr Glu Lys	
232 237 242 247	
aag cag acc aag gtg gaa ttt cca gag gcc cgg atc ttc gag gag acc	1001
Lys Gln Thr Lys Val Glu Phe Pro Glu Ala Arg Ile Phe Glu Glu Thr	
248 253 258 263	
ctg aac atc ctc atc tac gag act ccc cgg ggc cca gac cca gcc ctc	1049
Leu Asn Ile Leu Ile Tyr Glu Thr Pro Arg Gly Pro Asp Pro Ala Leu	
264 269 274 279	
ctg gag gcc aca ggg gga gca gct gga gct ggt ggg gct ggc cgc ggg	1097
Leu Glu Ala Thr Gly Gly Ala Ala Gly Ala Gly Gly Ala Gly Arg Gly	
280 285 290 295	
gag gat gaa gag aac cga gag cac cgt gtc cgc agg atc cat gtc cgg	1145
Glu Asp Glu Glu Asn Arg Glu His Arg Val Arg Arg Ile His Val Arg	
296 301 306 311	
cgc cat atc acc cac gac gag cgt cct cat ggc caa caa att gtc ttc	1193
Arg His Ile Thr His Asp Glu Arg Pro His Gly Gln Gln Ile Val Phe	
312 317 322 327	
aag gac tga cctctga ccctccccct gccttctct tgccttggga ccagtcct	1249
Lys Asp *	
328	
ctctctttcc ctccccctcc cagacttttg ccccggtct gctggccaag tcgtgggtcc	1309

tcctctgtcc cttcattgca tggcacagct cactttggcc cttctccacc catcccaacc 1369
 ccattgctaa caacatggta cattccggcc ccaccactca gagccttccg aagccaacac 1429
 ttgtccccac cctggccctg cgctcctccc tctccagctg gttaagaggg atttagaatt 1489
 ccctttctct ttttttagtg catcgtccat gccaaagtgt gcggcccttc ctgacatcac 1549
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 tccctacctc cttaactttg tactagactg gcctgggcct gccagctca gcgttatcag 1669
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<210> 958
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 <212> DNA
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<220>
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 taaggcagat tatctgtgct gctcaagaac atgtgaagga aaaaagacga agtgcagaag 180
 ttgatgatgg ggctgctgaa aaggaaactc tgccagagtt tggagagggga aaggacaccg 240
 gaggacttgt gcctggaaag tctttgggtc ttgcaacact ggaatttgtgt gtatgcattc 300
 tagttagaca gctcccagaa ttaaacccta aattgacagg tagcccagga gtaaaagcta 360
 cgaagccaca gatactatta gaagatggaa gtagattggc ttcagctgca ttggttatcc 420
 tttccgaact tcctgcagtg tgctctcctg aaggaagcat ctcaattctc cctactatat 480
 tgtacctcac aatcggggtc ctcagagaga ctgctgtgaa gttacctggg ggccagttat 540
 cttcgacagt tgcagcttcc ctacaggctc taaaaggaat attatcttct ccc atg 596
 Met
 1

gcc cgg gca gaa aag agc cgt act gct tgg act gac ctt ctc cga agt 644
 Ala Arg Ala Glu Lys Ser Arg Thr Ala Trp Thr Asp Leu Leu Arg Ser
 2 7 12 17

gcc tta aca aca att ctt gac tgt tgg gat cca gtt gat gaa aca cac 692
 Ala Leu Thr Thr Ile Leu Asp Cys Trp Asp Pro Val Asp Glu Thr His

18	23	28	33	
caa gaa ctt gat gaa gtc agt cta ctt act gct atc aca gtg ttt att				740
Gln Glu Leu Asp Glu Val Ser Leu Leu Thr Ala Ile Thr Val Phe Ile				
34	39	44	49	
ttg tct acc agt cca gaa gta act acc atc cca tgc ctt cag aag cgc				788
Leu Ser Thr Ser Pro Glu Val Thr Thr Ile Pro Cys Leu Gln Lys Arg				
50	55	60	65	
tgt att gat aaa ttt aaa gct act ctt gag ata aaa gat cct gtg gta				836
Cys Ile Asp Lys Phe Lys Ala Thr Leu Glu Ile Lys Asp Pro Val Val				
66	71	76	81	
caa atc aag acc tac cag ctc cta cat tcc atc ttt cag tat cca aat				884
Gln Ile Lys Thr Tyr Gln Leu Leu His Ser Ile Phe Gln Tyr Pro Asn				
82	87	92	97	
cca gct gtt tcc tac cca tac att tac tct tta gca tcc tgt atc atg				932
Pro Ala Val Ser Tyr Pro Tyr Ile Tyr Ser Leu Ala Ser Cys Ile Met				
98	103	108	113	
gaa aaa ctg cag gaa ata gac aag aga aaa cct gaa aac act gct gag				980
Glu Lys Leu Gln Glu Ile Asp Lys Arg Lys Pro Glu Asn Thr Ala Glu				
114	119	124	129	
ctt gag atc ttc caa gaa ggc ata aag gtc tta gaa aca ctg gtt act				1028
Leu Glu Ile Phe Gln Glu Gly Ile Lys Val Leu Glu Thr Leu Val Thr				
130	135	140	145	
gtt gct gaa gaa cac cat cgc gct cag ctg gtg gcc tgt ctt ttg ccc				1076
Val Ala Glu Glu His His Arg Ala Gln Leu Val Ala Cys Leu Leu Pro				
146	151	156	161	
atc ctc att tcc ttc ctt ttg gat gaa aat tct ctg gga tca gca act				1124
Ile Leu Ile Ser Phe Leu Leu Asp Glu Asn Ser Leu Gly Ser Ala Thr				
162	167	172	177	
tcc ata atg aga aat tta cat gac ttt gct cta caa aat ctc atg caa				1172
Ser Ile Met Arg Asn Leu His Asp Phe Ala Leu Gln Asn Leu Met Gln				
178	183	188	193	
att gga cct cag tat tca tct gtt ttt aaa agt tta gtg gct tct tct				1220
Ile Gly Pro Gln Tyr Ser Ser Val Phe Lys Ser Leu Val Ala Ser Ser				
194	199	204	209	
cca gcc cta aaa gcc cgc ctt gag gct gct ata aag gcc aat cag gaa				1268
Pro Ala Leu Lys Ala Arg Leu Glu Ala Ala Ile Lys Gly Asn Gln Glu				
210	215	220	225	
agt gtc aaa gtc aag ata cca aca tct aaa tat act aag agt cct gga				1316
Ser Val Lys Val Lys Ile Pro Thr Ser Lys Tyr Thr Lys Ser Pro Gly				
226	231	236	241	
aaa aac tca agc atc caa tta aag acc agt ttc ctc tga tttttttttt				1365
Lys Asn Ser Ser Ile Gln Leu Lys Thr Ser Phe Leu *				
242	247	252		

ggaatagtaa gcaccttaat ataataaata cttgatcatt gcctttggtg acaaaaggga 1425
cattgtagac acaagtgcc ttagaggctc agttgattgt tttacctaa atagctgtga 1485
ctcttcaaag taacagcata cttaacatctt ttgtgtgtgt gcgtgggggt tgtgttttgt 1545
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gtgctaaaga actaaactta ctaaacaatc cactgcttta aaaatgaaat gaatttcttc 1665
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gtaaattatc tgcactaata ttgtatocca attgctgatt taaaattctg ctttggcccg 1785
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ggtcggggagt ttgagaccag cctgaccaac atggtgaaac cccgtctcta ctaaaaatac 1905
aaaaattagc cgggtgtggt ggcacacacc tgtaatocca gctactcagg aggccgaggc 1965
aggaaaatcg cttgaacctg gcaggcagag gttgcagtga gccaaagattg tgccactgca 2025
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<222> (124) .. (699)

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gtg atg ctt ctg gga gac aca ggc gtc ggc aaa aca tgt ttc ctg atc 168
Met Leu Leu Gly Asp Thr Gly Val Gly Lys Thr Cys Phe Leu Ile
1 5 10
caa ttc aaa gac ggg gcc ttc ctg tcc gga acc ttc ata gcc acc gtc 216
Gln Phe Lys Asp Gly Ala Phe Leu Ser Gly Thr Phe Ile Ala Thr Val
16 21 26 31
ggc ata gac ttc agg aac aag gtg gtg act gtg gat ggc gtg aga gtg 264
Gly Ile Asp Phe Arg Asn Lys Val Val Thr Val Asp Gly Val Arg Val
32 37 42 47
aag ctg cag atc tgg gac acc gct ggg cag gaa cgg ttc cga agc gtc 312
Lys Leu Gln Ile Trp Asp Thr Ala Gly Gln Glu Arg Phe Arg Ser Val
48 53 58 63

acc cat gct tat tac aga gat gct cag gcc ttg ctt ctg ctg tat gac	360
Thr His Ala Tyr Tyr Arg Asp Ala Gln Ala Leu Leu Leu Leu Tyr Asp	
64 69 74 79	
atc acc aac aaa tct tct ttc gac aac atc agg gcc tgg ctc act gag	408
Ile Thr Asn Lys Ser Ser Phe Asp Asn Ile Arg Ala Trp Leu Thr Glu	
80 85 90 95	
att cat gag tat gcc cag agg gac gtg gtg atc atg ctg cta ggc aac	456
Ile His Glu Tyr Ala Gln Arg Asp Val Val Ile Met Leu Leu Gly Asn	
96 101 106 111	
aag gcg gat atg agc agc gaa aga gtg atc cgt tcc gaa gac gga gag	504
Lys Ala Asp Met Ser Ser Glu Arg Val Ile Arg Ser Glu Asp Gly Glu	
112 117 122 127	
acc ttg gcc agg gag tac ggt gtt ccc ttc ctg gag acc agc gcc aag	552
Thr Leu Ala Arg Glu Tyr Gly Val Pro Phe Leu Glu Thr Ser Ala Lys	
128 133 138 143	
act ggc atg aat gtg gag tta gcc ttt ctg gcc atc gcc aag gaa ctg	600
Thr Gly Met Asn Val Glu Leu Ala Phe Leu Ala Ile Ala Lys Glu Leu	
144 149 154 159	
aaa tac cgg gcc ggg cat cag gcg gat gag ccc agc ttc cag atc cga	648
Lys Tyr Arg Ala Gly His Gln Ala Asp Glu Pro Ser Phe Gln Ile Arg	
160 165 170 175	
gac tat gta gag tcc cag aag aag cgc tcc agc tgc tgc tcc ttc atg	696
Asp Tyr Val Glu Ser Gln Lys Lys Arg Ser Ser Cys Cys Ser Phe Met	
176 181 186 191	
tga atcc cagggggcag agaggaggct ctggaggcac acaggatgca gccttcccc	753
*	
192	
tcccaggcct ggcttattcc aagaggctga gccaatgggg agaaagatgg aggactcact	813
gcacagccgc ttcttagcag ggagctatac tccaactcct acttgagtgc ctgcgggtctc	873
cccgcatcca cagggagggt aaaacactta gcttttattt taatagtaca taatttaata	933
ccaaaaaagg cgcttgatc ccaaaaaaac cgaggctggg agctagtggc ccttttgctt	993
tctaggactt ggggggcccgg ccctccctcc taagcataac aaaggtgggg ttgctccagc	1053
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 <212> DNA
 <213> Homo sapiens

<220>
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Met Ala Ala Glu Lys Gln Val Pro Gly Gly Gly Gly Gly Gly Gly Ser	
1 5 10	
ggc ggc ggc ggt ggc agt ggc ggc ggc ggt agc ggc ggt gga cgt ggt	96
Gly Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Arg Gly	
17 22 27 32	
gcc gga ggg gaa gaa aat aaa gaa aac gaa cgc cct tcg gcc gga tcg	144
Ala Gly Gly Glu Glu Asn Lys Glu Asn Glu Arg Pro Ser Ala Gly Ser	
33 38 43 48	
aag gca aac aaa gaa ttt ggg gat agc ctg agt ttg gag att ctt cag	192
Lys Ala Asn Lys Glu Phe Gly Asp Ser Leu Ser Leu Glu Ile Leu Gln	
49 54 59 64	
att att aag gaa tcc cag cag cag cat ggt tta cgg cat gga gat ttt	240
Ile Ile Lys Glu Ser Gln Gln Gln His Gly Leu Arg His Gly Asp Phe	
65 70 75 80	
cag agg tac agg ggc tac tgt tcc cgt aga caa aga cgt ctt cga aaa	288
Gln Arg Tyr Arg Gly Tyr Cys Ser Arg Arg Gln Arg Arg Leu Arg Lys	
81 86 91 96	
aca ctc aac ttc aag atg ggt aac aga cac aaa ttc aca ggg aag aaa	336
Thr Leu Asn Phe Lys Met Gly Asn Arg His Lys Phe Thr Gly Lys Lys	
97 102 107 112	
gtg act gaa gag ctt ctg acc gat aat aga tac ttg ctt ctg gtt ctg	384
Val Thr Glu Glu Leu Leu Thr Asp Asn Arg Tyr Leu Leu Leu Val Leu	
113 118 123 128	
atg gat gct gaa aga gcc tgg agc tac gcc atg cag ctg aaa cag gaa	432
Met Asp Ala Glu Arg Ala Trp Ser Tyr Ala Met Gln Leu Lys Gln Glu	
129 134 139 144	
gcc aac act gaa ccc cga aaa cgg ttt cac ttg tta tct cgc cta cgc	480
Ala Asn Thr Glu Pro Arg Lys Arg Phe His Leu Leu Ser Arg Leu Arg	
145 150 155 160	
aaa gcc gtg aag cat gca gag gaa ttg gaa cgc ttg tgt gag agc aat	528
Lys Ala Val Lys His Ala Glu Glu Leu Glu Arg Leu Cys Glu Ser Asn	
161 166 171 176	
cgc gtg gat gcc aag acc aaa tta gag gct cag gct tac aca gct tac	576
Arg Val Asp Ala Lys Thr Lys Leu Glu Ala Gln Ala Tyr Thr Ala Tyr	
177 182 187 192	
ctc tca gga atg cta cgt ttt gaa cat caa gaa tgg aaa gct gcc att	624
Leu Ser Gly Met Leu Arg Phe Glu His Gln Glu Trp Lys Ala Ala Ile	
193 198 203 208	

gag gct ttt aac aaa tgc aaa act atc tat	gag aag cta gcc agt gct	672
Glu Ala Phe Asn Lys Cys Lys Thr Ile Tyr	Glu Lys Leu Ala Ser Ala	
209	214 219 224	
ttc aca gag gag cag gct gtg ctg tat aac	caa cgt gtg gaa gag att	720
Phe Thr Glu Glu Gln Ala Val Leu Tyr Asn	Gln Arg Val Glu Glu Ile	
225	230 235 240	
tca ccc aac atc cgc tat tgt gca tat aat	att ggg gac cag tca gcc	768
Ser Pro Asn Ile Arg Tyr Cys Ala Tyr Asn	Ile Gly Asp Gln Ser Ala	
241	246 251 256	
atc aat gaa ctc atg cag atg aga ttg agg	tct ggg ggc act gag ggt	816
Ile Asn Glu Leu Met Gln Met Arg Leu Arg	Ser Gly Gly Thr Glu Gly	
257	262 267 272	
ctc ttg gct gaa aaa ttg gag gct ttg atc	act cag act cga gcc aaa	864
Leu Leu Ala Glu Lys Leu Glu Ala Leu Ile	Thr Gln Thr Arg Ala Lys	
273	278 283 288	
cag gca gct acc atg agt gaa gtg gag tgg	aga ggg aga acg gtt cca	912
Gln Ala Ala Thr Met Ser Glu Val Glu Trp	Arg Gly Arg Thr Val Pro	
289	294 299 304	
gtg aag att gac aaa gtg cgc att ttc tta	tta gga ctg gct gat aac	960
Val Lys Ile Asp Lys Val Arg Ile Phe Leu	Leu Gly Leu Ala Asp Asn	
305	310 315 320	
gaa gca gct att gtc cag gct gaa agc gaa	gaa act aag gag cgc ctg	1008
Glu Ala Ala Ile Val Gln Ala Glu Ser Glu	Glu Thr Lys Glu Arg Leu	
321	326 331 336	
ttt gaa tca atg ctc agc gag tgt cgg gac	gcc atc cag gtg gtt cgg	1056
Phe Glu Ser Met Leu Ser Glu Cys Arg Asp	Ala Ile Gln Val Val Arg	
337	342 347 352	
gag gag ctc aag cca gat cag aaa cag aga	gat tat atc ctt gaa gga	1104
Glu Glu Leu Lys Pro Asp Gln Lys Gln Arg	Asp Tyr Ile Leu Glu Gly	
353	358 363 368	
gag cca ggg aag gtg tct aat ctt caa tac	ttg cat agc tac ctg act	1152
Glu Pro Gly Lys Val Ser Asn Leu Gln Tyr	Leu His Ser Tyr Leu Thr	
369	374 379 384	
tac atc aag cta tca acg gca atc aag cgt	aat gag aac atg gcc aaa	1200
Tyr Ile Lys Leu Ser Thr Ala Ile Lys Arg	Asn Glu Asn Met Ala Lys	
385	390 395 400	
ggt ctg cag agg gct ctg ctg cag cag cag	cca gag gat gac agc aag	1248
Gly Leu Gln Arg Ala Leu Leu Gln Gln Gln	Pro Glu Asp Asp Ser Lys	
401	406 411 416	
cgc tca ccc cgg ccc cag gac ctg atc cga	ctc tat gac atc atc tta	1296
Arg Ser Pro Arg Pro Gln Asp Leu Ile Arg	Leu Tyr Asp Ile Ile Leu	
417	422 427 432	
cag aat ctg gtg gaa ttg ctc cag ctt cct	ggt tta gag gaa gac aaa	1344

Gln Asn Leu Val Glu Leu Leu Gln Leu Pro Gly Leu Glu Glu Asp Lys	
433	438 443 448
gcc ttc cag aaa gag ata ggc ctc aag act ctg gtg ttc aaa gct tac	1392
Ala Phe Gln Lys Glu Ile Gly Leu Lys Thr Leu Val Phe Lys Ala Tyr	
449	454 459 464
agg tgt ttt ttc att gct cag tcc tat gtg ctg gtg aag aag tgg agc	1440
Arg Cys Phe Phe Ile Ala Gln Ser Tyr Val Leu Val Lys Lys Trp Ser	
465	470 475 480
gaa gcc ctt gtc ctg tat gac aga gtc ctg aaa tat gca aat gaa gta	1488
Glu Ala Leu Val Leu Tyr Asp Arg Val Leu Lys Tyr Ala Asn Glu Val	
481	486 491 496
aat tct gat gct ggc gcc ttc aag aac agc cta aag gac ctg cct gat	1536
Asn Ser Asp Ala Gly Ala Phe Lys Asn Ser Leu Lys Asp Leu Pro Asp	
497	502 507 512
gtg caa gag ctc atc act caa gtg cgg tca gag aag tgc tcc ctg cag	1584
Val Gln Glu Leu Ile Thr Gln Val Arg Ser Glu Lys Cys Ser Leu Gln	
513	518 523 528
gcc gca gcc atc ctt gat gca aac gac gct cat caa aca gag acc tcc	1632
Ala Ala Ala Ile Leu Asp Ala Asn Asp Ala His Gln Thr Glu Thr Ser	
529	534 539 544
tcc tcc caa gtc aag gac aat aag cct ctg gtt gaa cgg ttt gag aca	1680
Ser Ser Gln Val Lys Asp Asn Lys Pro Leu Val Glu Arg Phe Glu Thr	
545	550 555 560
ttc tgc ctg gac cct tcc ctt gtc acc aag caa gcc aac ctt gtg cac	1728
Phe Cys Leu Asp Pro Ser Leu Val Thr Lys Gln Ala Asn Leu Val His	
561	566 571 576
ttc cca cca ggc ttc cag ccc att ccc tgc aag cct ttg ttc ttt gac	1776
Phe Pro Pro Gly Phe Gln Pro Ile Pro Cys Lys Pro Leu Phe Phe Asp	
577	582 587 592
ctg gcc ctc aac cat gtg gct ttc cca ccc ctt gag gac aag ttg gaa	1824
Leu Ala Leu Asn His Val Ala Phe Pro Pro Leu Glu Asp Lys Leu Glu	
593	598 603 608
cag aag acc aag agt ggc ctc act gga tac atc aag ggc atc ttt gga	1872
Gln Lys Thr Lys Ser Gly Leu Thr Gly Tyr Ile Lys Gly Ile Phe Gly	
609	614 619 624
ttc agg agc taa cca ggctcttcct cggggggcggg ggagattctg actcttaac	1927
Phe Arg Ser *	
625	
tgtattgtga gaaaatccca gpaagttcca tgatattaaa tcca	1971

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 <222> (101)..(1282)

<400> 961

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gcagctgagc gtgattcccc ggtcgacgat ttcgtggaag atg gac gca gct act	115
Met Asp Ala Ala Thr	
ctg acc tac gac act ctc cgg ttt gct gag ttt gaa gat ttt cct gag	163
Leu Thr Tyr Asp Thr Leu Arg Phe Ala Glu Phe Glu Asp Phe Pro Glu	
6 11 16 21	
acc tca gag ccc gtt tgg ata ctg ggt aga aaa tac agc att ttc aca	211
Thr Ser Glu Pro Val Trp Ile Leu Gly Arg Lys Tyr Ser Ile Phe Thr	
22 27 32 37	
gaa aag gac gag atc ttg tct gat gtg gca tct aga ctt tgg ttt aca	259
Glu Lys Asp Glu Ile Leu Ser Asp Val Ala Ser Arg Leu Trp Phe Thr	
38 43 48 53	
tac agg aaa aac ttt cca gcc att ggg ggg aca ggc ccc acc tcg gac	307
Tyr Arg Lys Asn Phe Pro Ala Ile Gly Gly Thr Gly Pro Thr Ser Asp	
54 59 64 69	
aca ggc tgg ggc tgc atg ctg cgg tgt gga cag atg atc ttt gcc caa	355
Thr Gly Trp Gly Cys Met Leu Arg Cys Gly Gln Met Ile Phe Ala Gln	
70 75 80 85	
gcc ctg gtg tgc cgg cac cta ggc cga gat tgg agg tgg aca caa agg	403
Ala Leu Val Cys Arg His Leu Gly Arg Asp Trp Arg Trp Thr Gln Arg	
86 91 96 101	
aag agg cag cca gac agc tac ttc agc gtc ctc aac gca ttc atc gac	451
Lys Arg Gln Pro Asp Ser Tyr Phe Ser Val Leu Asn Ala Phe Ile Asp	
102 107 112 117	
agg aag gac agt tac tac tcc att cac cag ata gcg caa atg gga gtt	499
Arg Lys Asp Ser Tyr Tyr Ser Ile His Gln Ile Ala Gln Met Gly Val	
118 123 128 133	
ggc gaa ggc aag tcc ata ggc cag tgg tac ggg ccc aac act gtc gcc	547
Gly Glu Gly Lys Ser Ile Gly Gln Trp Tyr Gly Pro Asn Thr Val Ala	
134 139 144 149	
cag gtc ctg aag aag ctt gct gtc ttc gat acg tgg agc tcc ttg gcg	595
Gln Val Leu Lys Lys Leu Ala Val Phe Asp Thr Trp Ser Ser Leu Ala	
150 155 160 165	
gtc cac att gca atg gac aac act gtt gtg atg gag gaa atc aga agg	643
Val His Ile Ala Met Asp Asn Thr Val Val Met Glu Glu Ile Arg Arg	

166	171	176	181	
ttg tgc agg acc agc gtt ccc tgt gca ggc gcc act gcg ttt cct gca				691
Leu Cys Arg Thr Ser Val Pro Cys Ala Gly Ala Thr Ala Phe Pro Ala				
182	187	192	197	
gat tcc gac cgg cac tgc aac gga ttc cct gcc gga gct gag gtc acc				739
Asp Ser Asp Arg His Cys Asn Gly Phe Pro Ala Gly Ala Glu Val Thr				
198	203	208	213	
aac agg ccg tcg cca tgg aga ccc ctg gta ctt ctc att ccc ctg cgc				787
Asn Arg Pro Ser Pro Trp Arg Pro Leu Val Leu Leu Ile Pro Leu Arg				
214	219	224	229	
ctg ggg ctc acg gac atc aac gag gcc tac gtg gag acg ctg aag cac				835
Leu Gly Leu Thr Asp Ile Asn Glu Ala Tyr Val Glu Thr Leu Lys His				
230	235	240	245	
tgc ttc atg atg ccc cag tcc ctg ggc gtc atc gga ggg aag ccc aac				883
Cys Phe Met Met Pro Gln Ser Leu Gly Val Ile Gly Gly Lys Pro Asn				
246	251	256	261	
agc gcc cac tac ttc atc ggc tac gtt ggt gag gag ctc atc tac ctg				931
Ser Ala His Tyr Phe Ile Gly Tyr Val Gly Glu Glu Leu Ile Tyr Leu				
262	267	272	277	
gac ccc cac acc acg cag cca gcc gtg gag ccc act gat ggc tgc ttc				979
Asp Pro His Thr Thr Gln Pro Ala Val Glu Pro Thr Asp Gly Cys Phe				
278	283	288	293	
atc ccg gac gag agc ttc cac tgc cag cac ccg ccg tgc cgc atg agc				1027
Ile Pro Asp Glu Ser Phe His Cys Gln His Pro Pro Cys Arg Met Ser				
294	299	304	309	
atc gcg gag ctt gac ccg tcc atc gct gtg ggg ttt ttc tgt aag act				1075
Ile Ala Glu Leu Asp Pro Ser Ile Ala Val Gly Phe Phe Cys Lys Thr				
310	315	320	325	
gaa gat gac ttc aat gat tgg tgc cag caa gtc aaa aag ctg tct ctg				1123
Glu Asp Asp Phe Asn Asp Trp Cys Gln Gln Val Lys Lys Leu Ser Leu				
326	331	336	341	
ctt gga ggt gcc ctg ccc atg ttt gag ctg gtg gag cag cag cct tca				1171
Leu Gly Gly Ala Leu Pro Met Phe Glu Leu Val Glu Gln Gln Pro Ser				
342	347	352	357	
cat ctg gcc tgc ccc gac gtc ctg aac ctg tcc cta gat tct tct gat				1219
His Leu Ala Cys Pro Asp Val Leu Asn Leu Ser Leu Asp Ser Ser Asp				
358	363	368	373	
gta gag cga ctg gaa aga ttc ttc gac tca gaa gat gaa gac ttt gaa				1267
Val Glu Arg Leu Glu Arg Phe Phe Asp Ser Glu Asp Glu Asp Phe Glu				
374	379	384	389	
atc ctg tcc ctt tga aaatcctggg gtcgggggtg gcacctgtga gagcctgggg				1322
Ile Leu Ser Leu *				
390				

ctcctggtgc cgctgcgttt catccatccc gcccgctcgc ctgccgaggg ctgcgccccg 1382
tgctgcctcc ccccagaggg ccaccgctg tgctcgtgga ctgaggctgc gctgccccgg 1442
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cgcacgcgga gccgtctgtt aggagcttcc agagcgttct ctcgacactg ccagccccgt 1562
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attaaagtcc tgtttgaagt tgtcaaaaaa aaa 1655

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ggcgcg atg ccg ggg cgg cac gtt tct cga gtc cgg gca ttg tac aag 108
Met Pro Gly Arg His Val Ser Arg Val Arg Ala Leu Tyr Lys
1 5 10
cgc gtc ttg cag ctg cac cgt gtt ctg ccc ccg gac ctc aaa tcc ctg 156
Arg Val Leu Gln Leu His Arg Val Leu Pro Pro Asp Leu Lys Ser Leu
15 20 25 30
ggc gac cag tac gtg aaa gac gaa ttt agg aga cat aag acc gtt ggt 204
Gly Asp Gln Tyr Val Lys Asp Glu Phe Arg Arg His Lys Thr Val Gly
31 36 41 46
tct gac gag gca cag cgt ttc ttg caa gaa tgg gag gtg tat gca aca 252
Ser Asp Glu Ala Gln Arg Phe Leu Gln Glu Trp Glu Val Tyr Ala Thr
47 52 57 62
gcg tta ttg caa cag gct aac gaa aac aga caa aat tca act gga aaa 300
Ala Leu Leu Gln Gln Ala Asn Glu Asn Arg Gln Asn Ser Thr Gly Lys
63 68 73 78
gca tgt ttt ggc acc ttc ctc cca gaa gaa aaa ctt aat gac ttt cgt 348
Ala Cys Phe Gly Thr Phe Leu Pro Glu Glu Lys Leu Asn Asp Phe Arg
79 84 89 94
gat gaa caa att gga cag ttg cag gag ctg atg caa gaa gcc aca aaa 396
Asp Glu Gln Ile Gly Gln Leu Gln Glu Leu Met Gln Glu Ala Thr Lys
95 100 105 110
ccc aat agg caa ttt agt att tct gag tct atg aaa cca aaa ttt tag 444

Pro	Asn	Arg	Gln	Phe	Ser	Ile	Ser	Glu	Ser	Met	Lys	Pro	Lys	Phe	*
111					116					121					126
tctatacaac	aaagcttaat	aagacatgca	aaaatttaga	acccctactt	taactgtcat										504
tggtttttga	aatatattta	agctttgaaa	acacctgtta	ttaatgaaat	actcttttat										564
tttggatatt	atgattgcag	tatatggatc	aagatcacta	gtgacaattg	aaaaaaaacta										624
ttggaataat	agcacttgta	taaaattcag	ttttggaact	aaacagcaaa	tttctagaat										684
tttgctgaaa	atgtttttaa	atgctattct	catccagcca	tattagtctt	ctggcttttc										744
tttagcttca	tcaaataagc	atgttgtgat	aatgatagat	gtacaattcc	aacaagggtta										804
ttatttttta	aatacattgt	cattctgaac	attttatcac	ttctagttta	ataatacata										864
catgattttt	cttctgaatg	tctcttctcc	ctgcatcact	gttcattcac	aatgaaaggt										924
taggaagaag	ctttaaaatt	cactatttta	ctatcaatca	tttgtataat	aaactataca										984
aagtataaaa	aaaaaa														1000

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 <212> DNA
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 <222> (67) .. (369)

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	Met Pro Gly Arg His Val Ser Arg Val Arg Ala Leu Tyr Lys															
	1 5 10															
cgc gtc ttg cag ctg cac cgt gtt ctg ccc ccg gac ctc aaa tcc ctg																156
Arg Val Leu Gln Leu His Arg Val Leu Pro Pro Asp Leu Lys Ser Leu																
15 20 25 30																
ggc gac cag gtg tat gca aca gcg tta ttg caa cag gct aac gaa aac																204
Gly Asp Gln Val Tyr Ala Thr Ala Leu Leu Gln Gln Ala Asn Glu Asn																
31 36 41 46																
aga caa aat tca act gga aaa gca tgt ttt ggc acc ttc ctc cca gaa																252
Arg Gln Asn Ser Thr Gly Lys Ala Cys Phe Gly Thr Phe Leu Pro Glu																
47 52 57 62																
gaa aaa ctt aat gac ttt cgt gat gaa caa att gga cag ttg cag gag																300
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Asp Glu Ser Gly Lys His Trp Ser Lys Ser Val Met Asp Lys Gln Tyr	
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Glu Ile Leu Cys Val Ser Gln Phe Thr Leu Gln Cys Val Leu Lys Gly	
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Asn Lys Pro Asp Phe His Leu Ala Met Pro Thr Glu Gln Ala Glu Gly	
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Phe Tyr Asn Ser Phe Leu Glu Gln Leu Arg Lys Thr Tyr Arg Pro Glu	
105 110 115 120	
ctt atc aaa gat ggc aag ttt ggg gcc tac atg cag gtg cac att cag	556
Leu Ile Lys Asp Gly Lys Phe Gly Ala Tyr Met Gln Val His Ile Gln	
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Asn Asp Gly Pro Val Thr Ile Glu Leu Glu Ser Pro Ala Pro Gly Thr	
137 142 147 152	
gct acc tct gac cca aag cag ctg tca aag ctc gaa aaa cag cag cag	652
Ala Thr Ser Asp Pro Lys Gln Leu Ser Lys Leu Glu Lys Gln Gln Gln	
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Arg Lys Glu Lys Thr Arg Ala Lys Gly Pro Ser Glu Ser Ser Lys Glu	
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Arg Asn Thr Pro Arg Lys Glu Asp Arg Ser Ala Ser Ser Gly Ala Glu	
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                                     Met
                                     1

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Ala Arg Leu Arg Asp Cys Leu Pro Arg Leu Met Leu Thr Leu Arg Ser
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Leu Leu Phe Trp Ser Leu Val Tyr Cys Tyr Cys Gly Leu Cys Ala Ser
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Ile His Leu Leu Lys Leu Leu Trp Ser Leu Gly Lys Gly Pro Ala Gln
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acc ttc cgg cgg ccc gcc cgg gag cac cct ccc gcg tgc ctg agc gac      309
Thr Phe Arg Arg Pro Ala Arg Glu His Pro Pro Ala Cys Leu Ser Asp
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Pro Ser Leu Gly Thr His Cys Tyr Val Arg Ile Lys Asp Ser Gly Leu
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Arg Phe His Tyr Val Ala Ala Gly Glu Arg Gly Lys Pro Leu Met Leu
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Leu Leu His Gly Phe Pro Glu Phe Trp Tyr Ser Trp Arg Tyr Gln Leu
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Arg Glu Phe Lys Ser Glu Tyr Arg Val Val Ala Leu Asp Leu Arg Gly
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tat gga gaa aca gat gct ccc att cat cga cag aat tat aaa ttg gat      549
Tyr Gly Glu Thr Asp Ala Pro Ile His Arg Gln Asn Tyr Lys Leu Asp
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Cys Leu Ile Thr Asp Ile Lys Asp Ile Leu Asp Ser Leu Gly Tyr Ser
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Ile Ala Ile Cys Tyr Pro Glu Met Val Met Lys Leu Ile Val Ile Asn	
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Phe Pro His Pro Asn Val Phe Thr Glu Tyr Ile Leu Arg His Pro Ala	
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Gln Leu Leu Lys Ser Ser Tyr Tyr Tyr Phe Phe Gln Ile Pro Trp Phe	
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Phe Thr Ser His Ser Thr Gly Ile Gly Arg Lys Gly Cys Gln Leu Thr	
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Thr Glu Asp Leu Glu Ala Tyr Ile Tyr Val Phe Ser Gln Pro Gly Ala	
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Leu Ser Gly Pro Ile Asn His Tyr Arg Asn Ile Phe Ser Cys Leu Pro	
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306 311 316 321	
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Val Lys Asn Tyr Phe Arg Leu Thr Ile Leu Ser Glu Ala Ser His Trp	
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Leu Lys Glu Glu Thr Arg Lys Lys Asp *	
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 Arg Ala Trp Arg Leu Pro Arg Glu Gly Leu Gly Pro His Gly Pro Ser
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 Phe Ala Arg Val Pro Val Ala Pro Ser Ser Ser Ser Gly Gly Arg Gly
 22 27 32 37
 ggc gcc gag ccg agg ccg ctt ccg ctt tcc tac agg ctt ctg gac ggg 199
 Gly Ala Glu Pro Arg Pro Leu Pro Leu Ser Tyr Arg Leu Leu Asp Gly
 38 43 48 53
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 Glu Ala Ala Leu Pro Ala Val Val Phe Leu His Gly Leu Phe Gly Ser
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 Arg Arg Val Leu Thr Val Asp Ala Arg Asn His Gly Asp Ser Pro His
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 Ser Pro Asp Met Ser Tyr Glu Ile Met Ser Gln Asp Leu Gln Asp Leu
 102 107 112 117
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Ser His Phe Ala Thr Tyr Val Ala Ala Met Arg Ala Ile Asn Ile Ala	
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Val Pro Val Gln Glu Lys Lys Lys Arg Leu Arg Arg Ala Pro Trp Arg
 13              18              23              28

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Ala Phe Ala Gln Pro Gln Arg Leu Lys His Pro Ala Glu Gln Pro Ile
 29              34              39              44

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Val Arg Gln Cys Leu Gln Arg Pro Pro Leu Cys Gly Val Leu Gly Pro
 45              50              55              60

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Arg	Trp	Pro	Trp	Gln	Ala	Ala	Ile	Tyr	Arg	Arg	Thr	Ser	Gly	Val	His	
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Thr	Ser	Phe	Gln	Glu	Ser	His	Ile	Thr	Val	Ala	Gly	Trp	Asn	Val	Leu	
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Arg Asn Met Lys *				
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acctggtggt cttccccaac tttcagttat acgaatgcca tcagcttgac cagggaagat				1947
ctgggcttca tgaggccctt tttgaggctc tcaagttcta gagagctgcc tgtgggacag				2007
cccagggcag cagagctggg atgtgggtgca tgcctttgtg tacatggcca cagtacagtc				2067
tggtcctttt ccttccccat ctcttgtaga cattttaata aaataagggt tggcttctga				2127
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<210> 970

<211> 1139

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (38)..(1084)

<400> 970

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Met Ala Ala Pro Trp Trp	
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cga gcc gcg ctg tgc gag tgt cgg aga tgg cgg ggc ttc agc acc tcg	103
Arg Ala Ala Leu Cys Glu Cys Arg Arg Trp Arg Gly Phe Ser Thr Ser	
7 12 17 22	
gcc gtc ctg ggc cgc cgg aca ccc ccg ctg ggg ccg atg ccc aac agt	151
Ala Val Leu Gly Arg Arg Thr Pro Pro Leu Gly Pro Met Pro Asn Ser	
23 28 33 38	
gac atc gac ttg agc aac ctg gag cgg ctg gag aag tac cgg agc ttc	199
Asp Ile Asp Leu Ser Asn Leu Glu Arg Leu Glu Lys Tyr Arg Ser Phe	
39 44 49 54	
gac cgc tac cgg cgc cga gca gag cag gag gcg cag gcc ccg cac tgg	247
Asp Arg Tyr Arg Arg Arg Ala Glu Gln Glu Ala Gln Ala Pro His Trp	
55 60 65 70	
tgg cgg acc tac cga gag tat ttc ggg gag aag aca gat ccc aaa gag	295
Trp Arg Thr Tyr Arg Glu Tyr Phe Gly Glu Lys Thr Asp Pro Lys Glu	
71 76 81 86	
aag att gat att ggg ctg cct cca ccc aaa gtc tcc cgg acc caa cag	343
Lys Ile Asp Ile Gly Leu Pro Pro Pro Lys Val Ser Arg Thr Gln Gln	
87 92 97 102	
cta ctg gaa cgg aaa cag gcc atc cag gag ctt cgg gcc aat gtg gaa	391
Leu Leu Glu Arg Lys Gln Ala Ile Gln Glu Leu Arg Ala Asn Val Glu	
103 108 113 118	
gag gag cgg gct gcc cgc ctc cgc aca gcc agt gtc ccg ctg gat gcc	439
Glu Glu Arg Ala Ala Arg Leu Arg Thr Ala Ser Val Pro Leu Asp Ala	
119 124 129 134	
gtg cgg gcc gag tgg gag agg acc tgt ggc ccc tac cac aag cag cgt	487
Val Arg Ala Glu Trp Glu Arg Thr Cys Gly Pro Tyr His Lys Gln Arg	
135 140 145 150	
ctg gct gag tat tac ggc ctc tac cga gac ctg ttc cac ggt gcc acc	535
Leu Ala Glu Tyr Tyr Gly Leu Tyr Arg Asp Leu Phe His Gly Ala Thr	
151 156 161 166	
ttt gtg ccc cga gtc ccc ctg cac gtg gcc tac gct gtg ggt gag gat	583
Phe Val Pro Arg Val Pro Leu His Val Ala Tyr Ala Val Gly Glu Asp	
167 172 177 182	
gac ctg atg cct gtg tac tgt ggc aat gag gtg act cca acc gag gct	631
Asp Leu Met Pro Val Tyr Cys Gly Asn Glu Val Thr Pro Thr Glu Ala	
183 188 193 198	
gcc caa gcg cca gag gtg acc tat gag gca gaa gag ggc tcc ttg tgg	679

Ala Gln Ala Pro Glu Val Thr Tyr Glu Ala Glu Glu Gly Ser Leu Trp	
199 204 209 214	
acg ttg cta ctc act agc ttg gat ggg cac ctg ctg gag cca gat gct	727
Thr Leu Leu Leu Thr Ser Leu Asp Gly His Leu Leu Glu Pro Asp Ala	
215 220 225 230	
gag tac ctc cac tgg ctg cta acc aac atc ccg ggt aac cgg gtg gct	775
Glu Tyr Leu His Trp Leu Leu Thr Asn Ile Pro Gly Asn Arg Val Ala	
231 236 241 246	
gaa gga cag gtg acg tgt ccc tac ctc ccc ccc ttc cct gcc cga ggc	823
Glu Gly Gln Val Thr Cys Pro Tyr Leu Pro Pro Phe Pro Ala Arg Gly	
247 252 257 262	
tcc ggc atc cac cgt ctt gcc ttc ctg ctc ttc aag cag gac cag ccg	871
Ser Gly Ile His Arg Leu Ala Phe Leu Leu Phe Lys Gln Asp Gln Pro	
263 268 273 278	
att gac ttc tct gag gac gca cgc ccc tca ccc tgc tat cag ctg gcc	919
Ile Asp Phe Ser Glu Asp Ala Arg Pro Ser Pro Cys Tyr Gln Leu Ala	
279 284 289 294	
cag cgg acc ttc cgc act ttt gat ttc tac aag aaa cac caa gaa acc	967
Gln Arg Thr Phe Arg Thr Phe Asp Phe Tyr Lys Lys His Gln Glu Thr	
295 300 305 310	
atg act cca gcc ggc ttg tcc ttc ttc cag tgc cgc tgg gat gac tcc	1015
Met Thr Pro Ala Gly Leu Ser Phe Phe Gln Cys Arg Trp Asp Asp Ser	
311 316 321 326	
gtc acc tac atc ttc cac cag ctt ctg gac atg cgg gag ccg gtg ttt	1063
Val Thr Tyr Ile Phe His Gln Leu Leu Asp Met Arg Glu Pro Val Phe	
327 332 337 342	
gag ttc gtg cgg ccg ctc tag ag tatccctcga ggggcccaag cttacgcgta	1116
Glu Phe Val Arg Pro Leu *	
343 348	
cccagctttc ttgtacaaag tgg	1139

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 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
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ctc ttt gac acc aag gag agc ctg gac acc acc tgc aag gaa atc agc	417
Leu Phe Asp Thr Lys Glu Ser Leu Asp Thr Thr Cys Lys Glu Ile Ser	
67 72 77 82	
tgc tgc atc atc tcc tcc tgc cca ggg ccc cat gct att gtc cta gtt	465
Cys Cys Ile Ile Ser Ser Cys Pro Gly Pro His Ala Ile Val Leu Val	
83 88 93 98	
ctg ctg ctg ggc cgc tac aca gag gag gag cag aaa acc gtt gca ttg	513
Leu Leu Leu Gly Arg Tyr Thr Glu Glu Glu Gln Lys Thr Val Ala Leu	
99 104 109 114	
atc aag gct gtc ttt ggg aag tca gcc atg aag cac atg gtc atc ttg	561
Ile Lys Ala Val Phe Gly Lys Ser Ala Met Lys His Met Val Ile Leu	
115 120 125 130	
ttc act cgc aaa gaa gag ttg gag ggc cag agc ttc cat gac ttc ata	609
Phe Thr Arg Lys Glu Glu Leu Glu Gly Gln Ser Phe His Asp Phe Ile	
131 136 141 146	
gca gat gcg gat gtg ggc cta aaa agc atc gtc aag gag tgc ggg aac	657
Ala Asp Ala Asp Val Gly Leu Lys Ser Ile Val Lys Glu Cys Gly Asn	
147 152 157 162	
cgc tgc tgt gcc ttt agc aac agc aag aaa acc agt aag gca gag aag	705
Arg Cys Cys Ala Phe Ser Asn Ser Lys Lys Thr Ser Lys Ala Glu Lys	
163 168 173 178	
gaa agt caa gtg cag gag ttg gtg gag ctg ata gag aaa atg gtg cag	753
Glu Ser Gln Val Gln Glu Leu Val Glu Leu Ile Glu Lys Met Val Gln	
179 184 189 194	
tgc aac gaa ggg gct tac ttt tct gat gac ata tac aag gac aca gag	801
Cys Asn Glu Gly Ala Tyr Phe Ser Asp Asp Ile Tyr Lys Asp Thr Glu	
195 200 205 210	
gaa agg ctg aaa caa cgg gaa gag gtt ttg agg aaa atc tac act gac	849
Glu Arg Leu Lys Gln Arg Glu Glu Val Leu Arg Lys Ile Tyr Thr Asp	
211 216 221 226	
caa tta aat gaa gaa att aaa cta gta gaa gag gat aag cat aaa tca	897
Gln Leu Asn Glu Glu Ile Lys Leu Val Glu Glu Asp Lys His Lys Ser	
227 232 237 242	
gag gaa gaa aag gag aaa gaa att aaa tta cta aaa tta aaa tat gat	945
Glu Glu Glu Lys Glu Lys Glu Ile Lys Leu Leu Lys Leu Lys Tyr Asp	
243 248 253 258	
gaa aaa aaa aaa aat ata agg gaa gaa gct gag aga aat ata ttt aaa	993
Glu Lys Lys Lys Asn Ile Arg Glu Glu Ala Glu Arg Asn Ile Phe Lys	
259 264 269 274	
gat gtt ttt aat agg att tgg aag atg ctt tca gaa ata tgg cat agg	1041
Asp Val Phe Asn Arg Ile Trp Lys Met Leu Ser Glu Ile Trp His Arg	
275 280 285 290	
ttt ttg tcg aaa tgt aag ttt tat tct tcc taa tttactgt gatttgtaa	1092

Phe Leu Ser Lys Cys Lys Phe Tyr Ser Ser *
 291 296 301

tggaatgaatt gtatttttgca aagatagtta gagaaatacc tccttcccct tagcttttatt 1152
 aaggatcat tgataaataa aaataaaata tgtttaatgt atataatgtg atttttaaat 1212
 atatatatat atacacacat tgtgaaataa tgaaataaag gtaattaaca caaaaaaaaaa 1272
 aaaaaaaaaa 1281

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 <211> 1225
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (77) .. (898)

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 gcgctcggct cgcagg atg gat ccc gta ccc ggg aca gac tcg gcg ccg 109
 Met Asp Pro Val Pro Gly Thr Asp Ser Ala Pro
 1 5
 ctg gct ggc ctg gcc tgg tcg tcg gcc tct gca ccc ccg ccg ccg ggg 157
 Leu Ala Gly Leu Ala Trp Ser Ser Ala Ser Ala Pro Pro Pro Arg Gly
 12 17 22 27
 ttc agc gcg atc tcc tgc acc gtc gag ggg gca ccc gcc agc ttt ggc 205
 Phe Ser Ala Ile Ser Cys Thr Val Glu Gly Ala Pro Ala Ser Phe Gly
 28 33 38 43
 aag agc ttc gcg cag aaa tct ggc tac ttc ctg tgc ctt agt tct ctg 253
 Lys Ser Phe Ala Gln Lys Ser Gly Tyr Phe Leu Cys Leu Ser Ser Leu
 44 49 54 59
 ggc agc cta gag aac ccg cag gag aac gtg gtg gcc gat atc cag atc 301
 Gly Ser Leu Glu Asn Pro Gln Glu Asn Val Val Ala Asp Ile Gln Ile
 60 65 70 75
 gtg gtg gac aag agc ccc ctg ccg ctg ggc ttc tcc ccc gtc tgc gac 349
 Val Val Asp Lys Ser Pro Leu Pro Leu Gly Phe Ser Pro Val Cys Asp
 76 81 86 91
 ccc atg gat tcc aag gcc tct gtg tcc aag aag aaa cgc atg tgt gtg 397
 Pro Met Asp Ser Lys Ala Ser Val Ser Lys Lys Lys Arg Met Cys Val
 92 97 102 107
 aag ctg ttg ccc ctg gga gcc acg gac acg gct gtg ttt gat gtc ccg 445
 Lys Leu Leu Pro Leu Gly Ala Thr Asp Thr Ala Val Phe Asp Val Arg
 108 113 118 123

ctg agt ggg aag acc aag aca gtg cct gga tac ctt cga ata ggg gac	493
Leu Ser Gly Lys Thr Lys Thr Val Pro Gly Tyr Leu Arg Ile Gly Asp	
124 129 134 139	
atg ggc ggc ttt gcc atc tgg tgc aag aag gcc aag gcc ccg agg cca	541
Met Gly Gly Phe Ala Ile Trp Cys Lys Lys Ala Lys Ala Pro Arg Pro	
140 145 150 155	
gtg ccc aag ccc cga ggt ctc agc cgg gac atg cag ggc ctc tct ctg	589
Val Pro Lys Pro Arg Gly Leu Ser Arg Asp Met Gln Gly Leu Ser Leu	
156 161 166 171	
gat gca gcc agc cag cca agt aag ggc ggc ctc ctg gag cgg aca gcg	637
Asp Ala Ala Ser Gln Pro Ser Lys Gly Gly Leu Leu Glu Arg Thr Ala	
172 177 182 187	
tca agg ctg ggc tct cgg gca tcc act ctg cgg agg aat gac tcc atc	685
Ser Arg Leu Gly Ser Arg Ala Ser Thr Leu Arg Arg Asn Asp Ser Ile	
188 193 198 203	
tac gag gcc tcc agc ctc tat ggc atc tca gcc atg gat ggg gtt ccc	733
Tyr Glu Ala Ser Ser Leu Tyr Gly Ile Ser Ala Met Asp Gly Val Pro	
204 209 214 219	
ttc aca ctc cac cca cga ttt gag ggc aag agc tgc agc ccc ctg gcc	781
Phe Thr Leu His Pro Arg Phe Glu Gly Lys Ser Cys Ser Pro Leu Ala	
220 225 230 235	
ttc tct gct ttt ggg gac ctg acc atc aag tct ctg gcg gac att gag	829
Phe Ser Ala Phe Gly Asp Leu Thr Ile Lys Ser Leu Ala Asp Ile Glu	
236 241 246 251	
gag gag tat aac tac ggc ttc gtg gtg gag aag acc gcg gct gcc cgc	877
Glu Glu Tyr Asn Tyr Gly Phe Val Val Glu Lys Thr Ala Ala Ala Arg	
252 257 262 267	
ctg ccc ccc agc gtc tca tag tc cctcaccctt ccgcggaaag agccccctta	930
Leu Pro Pro Ser Val Ser *	
268 273	
ctccacctcc ccgccagcct gggggggccac cccccctcac tgcattcctgg gaaccttcgc	990
cctgcaaggc gtttgctatc ttcagccact gggcggagct gcagccctgg aggagggggc	1050
gggtcgaggc tgcgtggtga tggggtctcc gccccacgc cctgccgggc agggctggag	1110
ctggacagaa gccagtgcct ttaagtcatt tgtgtcaaaa cctctgggg tccggaggct	1170
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<210> 974
 <211> 1583
 <212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (38) .. (1300)

<400> 974

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Met Met Thr Lys Met Asp

1

ccc aat gac cag gct caa agg gac atc ata ttt gaa ctg agg agg att 103
Pro Asn Asp Gln Ala Gln Arg Asp Ile Ile Phe Glu Leu Arg Arg Ile
7 12 17 22

gca ttt gac gca gag tct gat cct agc aat gcc cct ggg agt ggg acc 151
Ala Phe Asp Ala Glu Ser Asp Pro Ser Asn Ala Pro Gly Ser Gly Thr
23 28 33 38

gaa aaa cgc aaa gcc atg tac aca aag gac tac aaa atg ctg gga ttt 199
Glu Lys Arg Lys Ala Met Tyr Thr Lys Asp Tyr Lys Met Leu Gly Phe
39 44 49 54

acc aac cac atc aat cca gcc atg gac ttt acc cag act cct cct gga 247
Thr Asn His Ile Asn Pro Ala Met Asp Phe Thr Gln Thr Pro Pro Gly
55 60 65 70

atg ctg gcc ttg gac aac atg ctg tac ttg gct aaa gtc cac cag gac 295
Met Leu Ala Leu Asp Asn Met Leu Tyr Leu Ala Lys Val His Gln Asp
71 76 81 86

acc tac atc cgg att gtc ttg gag aac agt agc cgg gaa gac aaa cat 343
Thr Tyr Ile Arg Ile Val Leu Glu Asn Ser Ser Arg Glu Asp Lys His
87 92 97 102

gaa tgc ccc ttt ggc cgc agt gcc att gag ctc acc aaa atg ctc tgt 391
Glu Cys Pro Phe Gly Arg Ser Ala Ile Glu Leu Thr Lys Met Leu Cys
103 108 113 118

gaa atc ctg cag gtt ggg gaa cta cca aat gaa gga cgc aat gac tac 439
Glu Ile Leu Gln Val Gly Glu Leu Pro Asn Glu Gly Arg Asn Asp Tyr
119 124 129 134

cac ccg atg ttc ttt acc cat gac cga gcc ttt gaa gag ctc ttt gga 487
His Pro Met Phe Phe Thr His Asp Arg Ala Phe Glu Glu Leu Phe Gly
135 140 145 150

atc tgc atc cag ctg ttg aac aag acc tgg aag gag atg agg gca aca 535
Ile Cys Ile Gln Leu Leu Asn Lys Thr Trp Lys Glu Met Arg Ala Thr
151 156 161 166

gca gag gac ttc aac aag gtt atg caa gtc gtc cga gag caa atc act 583
Ala Glu Asp Phe Asn Lys Val Met Gln Val Val Arg Glu Gln Ile Thr
167 172 177 182

cga gct ttg ccc tcc aaa ccc aac tct ttg gat cag ttc aag agc aaa 631
Arg Ala Leu Pro Ser Lys Pro Asn Ser Leu Asp Gln Phe Lys Ser Lys

183	188	193	198	
ttg cgt agc ctg agt	tac tct gag att cta	cga ctg cgc cag tct	gag	679
Leu Arg Ser Leu Ser Tyr	Ser Glu Ile Leu Arg	Leu Arg Gln Ser	Glu	
199	204	209	214	
agg atg agt cag gat	gac ttc cag tcc ccg	cca att gtg gag ctg	agg	727
Arg Met Ser Gln Asp	Asp Phe Gln Ser Pro	Pro Ile Val Glu Leu	Arg	
215	220	225	230	
gag aag atc cag ccc	gag atc ctt gag ctg	atc aag cag cag cgc	ctg	775
Glu Lys Ile Gln Pro	Glu Ile Leu Glu Leu	Ile Lys Gln Gln Arg	Leu	
231	236	241	246	
aac cgg ctc tgt gag	ggc agc agc ttc cga	aag att ggg aac cgc	cga	823
Asn Arg Leu Cys Glu	Gly Ser Ser Phe Arg	Lys Ile Gly Asn Arg	Arg	
247	252	257	262	
agg caa gaa cgg ttc	tgg tac tgc cgg ttg	gca ctg aac cac aag	gtc	871
Arg Gln Glu Arg Phe	Trp Tyr Cys Arg Leu	Ala Leu Asn His Lys	Val	
263	268	273	278	
ctt cac tat ggt gag	ttg gat gac aac cca	caa ggg gag gtg aca	ttt	919
Leu His Tyr Gly Asp	Leu Asp Asp Asn Pro	Gln Gly Glu Val Thr	Phe	
279	284	289	294	
gaa tcc ctg cag gag	aaa att cct gtt gca	gac att aag gcc att	gtc	967
Glu Ser Leu Gln Glu	Lys Ile Pro Val Ala	Asp Ile Lys Ala Ile	Val	
295	300	305	310	
act ggg aaa gat tgt	ccc cac atg aaa gag	aaa agt gct ctg aaa	cag	1015
Thr Gly Lys Asp Cys	Pro His Met Lys Glu	Lys Ser Ala Leu Lys	Gln	
311	316	321	326	
aac aag gag gtg ttg	gaa ttg gcc ttc tcc	atc ctg tat gac cct	gat	1063
Asn Lys Glu Val Leu	Glu Leu Ala Phe Ser	Ile Leu Tyr Asp Pro	Asp	
327	332	337	342	
gag acc tta aac ttc	atc gca cct aat aaa	tat gag tac tgc atc	tgg	1111
Glu Thr Leu Asn Phe	Ile Ala Pro Asn Lys	Tyr Glu Tyr Cys Ile	Trp	
343	348	353	358	
att gac ggc ctc agt	gcc ctt ctg ggg aag	gac atg tcc agt gag	ctg	1159
Ile Asp Gly Leu Ser	Ala Leu Leu Gly Lys	Asp Met Ser Ser Glu	Leu	
359	364	369	374	
acc aag agt gac ctg	gac acc ctg ctg agc	atg gag atg aag ctg	cgg	1207
Thr Lys Ser Asp Leu	Asp Thr Leu Leu Ser	Met Glu Met Lys Leu	Arg	
375	380	385	390	
ctc ctg gac ctg gag	aac atc cag att ccc	gaa gcc cca ccc ccc	atc	1255
Leu Leu Asp Leu Glu	Asn Ile Gln Ile Pro	Glu Ala Pro Pro Pro	Ile	
391	396	401	406	
ccc aag gag ccc agc	agc tat gac ttt gtc	tat cac tat ggc tga	gcc	1303
Pro Lys Glu Pro Ser	Ser Tyr Asp Phe Val	Tyr His Tyr Gly *		
407	412	417		

Gln Asp Ile Val Tyr Lys Leu Val Pro Gly Leu Gln Glu Ala Glu Met	
75 80 85 90	
aga aag cag agg gag ttc tat cac aaa ttg ggc atg gag gtg ccg gga	700
Arg Lys Gln Arg Glu Phe Tyr His Lys Leu Gly Met Glu Val Pro Gly	
91 96 101 106	
gac atc aag ggg gag acc tgc tct gca aaa cag cac tta gat tcc cat	748
Asp Ile Lys Gly Glu Thr Cys Ser Ala Lys Gln His Leu Asp Ser His	
107 112 117 122	
cgg aat ggt gaa acc aaa gca gac gac agt tca aac aaa gag gcc gcg	796
Arg Asn Gly Glu Thr Lys Ala Asp Asp Ser Ser Asn Lys Glu Ala Ala	
123 128 133 138	
gag gag aag ccg gag gag gac aac gac tac cac cgc agc gac gag cag	844
Glu Glu Lys Pro Glu Glu Asp Asn Asp Tyr His Arg Ser Asp Glu Gln	
139 144 149 154	
gtg agc atc tgc ctg gag tgt aac agc agc aaa ctg cgc ggg ctg aag	892
Val Ser Ile Cys Leu Glu Cys Asn Ser Ser Lys Leu Arg Gly Leu Lys	
155 160 165 170	
cgg aag tgg atc cgc tgc tca gcc cag gcg acc gtc ttg cat ctg aag	940
Arg Lys Trp Ile Arg Cys Ser Ala Gln Ala Thr Val Leu His Leu Lys	
171 176 181 186	
aag ttc atc gcc aaa aaa ctc aac ctt tca tcc ttt aac gag ctg gac	988
Lys Phe Ile Ala Lys Lys Leu Asn Leu Ser Ser Phe Asn Glu Leu Asp	
187 192 197 202	
att tta tgc aac gag gag atc ctg ggc aag gac cac aca ctc aag ttc	1036
Ile Leu Cys Asn Glu Glu Ile Leu Gly Lys Asp His Thr Leu Lys Phe	
203 208 213 218	
gtg gtt gtc act agg tgg aga ttc aag aag gcg ccg ctc ctg ctg cac	1084
Val Val Val Thr Arg Trp Arg Phe Lys Lys Ala Pro Leu Leu Leu His	
219 224 229 234	
tac aga ccc aag atg gac ttg ctg tga atggt gccacacagc gccacacagc	1136
Tyr Arg Pro Lys Met Asp Leu Leu *	
235 240	
tgggccctcg cacccttgagg tgctcccggc cgccgcgctt aagaacattg cctctggggtg	1196
tcattgtggac cagacttctg aatagagaat atttataact tttgtatgag agagaattca	1256
cactcaacaa gacactacca gcaccacggt tacagaggat gaaaacactt cacagtctcc	1316
cagagccgat cgctctctcc cccgccccac cccgtgcttc agccttgacg ggagagtgat	1376
gctccaggca acacggttct gagtcacctt ctgacacgag ctccctctgc ttgctttcca	1436
ggtcttgaaa atctgaattc acttcagttt agtttatgaa ttttaggttt catgataagc	1496
ctcaattgta gttggacttt tattgaatcc ttctaagtt attgaaaaaa tgtcttttca	1556

tggtgaatga caatatttat gttgccttta gcttcttgaa gatttagaag ttatataaaa 1616
aattaattta aaagcaaaaa aaaaaaaaaa aaaa 1650

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<212> DNA
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<220>
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<222> (100)..(1200)

<400> 976
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ccccggggct cttcaccagt ccagctcggt tccagcacc atg tcg gtg cgg acg 114
Met Ser Val Arg Thr
1
cta ccg ctg ctc ttc ttg aac ttg ggc ggg gag atg ctt tac att ctc 162
Leu Pro Leu Leu Phe Leu Asn Leu Gly Gly Glu Met Leu Tyr Ile Leu
6 11 16 21
gac caa cgg ctg cgg gcc cag aac atc ccg gga gac aag gcc cgc aaa 210
Asp Gln Arg Leu Arg Ala Gln Asn Ile Pro Gly Asp Lys Ala Arg Lys
22 27 32 37
gat gaa tgg aca gag gtg gac aga aaa cga gtt ctg aat gac atc atc 258
Asp Glu Trp Thr Glu Val Asp Arg Lys Arg Val Leu Asn Asp Ile Ile
38 43 48 53
tcc acc atg ttc aat aga aag ttt atg gag gaa tta ttc aag cct caa 306
Ser Thr Met Phe Asn Arg Lys Phe Met Glu Glu Leu Phe Lys Pro Gln
54 59 64 69
gag ctc tac tcc aag aag gcc ctg agg act gtc tat gag cgc ctg gct 354
Glu Leu Tyr Ser Lys Lys Ala Leu Arg Thr Val Tyr Glu Arg Leu Ala
70 75 80 85
cat gcc tcc att atg aaa ctg aac cag gcc agc atg gat aag ctc tat 402
His Ala Ser Ile Met Lys Leu Asn Gln Ala Ser Met Asp Lys Leu Tyr
86 91 96 101
gac ctg atg acc atg gct ttc aaa tat caa gta ttg ctg tgt ccc cga 450
Asp Leu Met Thr Met Ala Phe Lys Tyr Gln Val Leu Leu Cys Pro Arg
102 107 112 117
ccc aag gat gtg ctg ctg gtc act ttc aat cac ttg gat acc atc aag 498
Pro Lys Asp Val Leu Leu Val Thr Phe Asn His Leu Asp Thr Ile Lys
118 123 128 133
gga ttc atc cga gac tcc cca acc atc ctg cag caa gtg gac gag act 546
Gly Phe Ile Arg Asp Ser Pro Thr Ile Leu Gln Gln Val Asp Glu Thr

134	139	144	149	
ttg cgg cag ctg aca gaa ata tat ggt ggt ctc tct gca ggg gag ttc				594
Leu Arg Gln Leu Thr Glu Ile Tyr Gly Gly Leu Ser Ala Gly Glu Phe				
150	155	160	165	
cag ctg atc cgg cag aca ctc ctc atc ttc ttc caa gac ctg cac atc				642
Gln Leu Ile Arg Gln Thr Leu Leu Ile Phe Phe Gln Asp Leu His Ile				
166	171	176	181	
cga gta tcc atg ttt cta aag gac aaa gtt cag aat aat aac ggt cgc				690
Arg Val Ser Met Phe Leu Lys Asp Lys Val Gln Asn Asn Asn Gly Arg				
182	187	192	197	
ttt gtg ttg ccg gtg tcc ggg cct gtt cct tgg gga act gaa gtt cca				738
Phe Val Leu Pro Val Ser Gly Pro Val Pro Trp Gly Thr Glu Val Pro				
198	203	208	213	
gga ctc atc aga atg ttc aac aac aaa ggt gaa gaa gtg aag agg ata				786
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Phe Glu Leu Tyr Gly Asp Arg Val Leu Lys Leu Gly Thr Asn Met Tyr				
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Ser Val Asn Gln Pro Val Glu Thr His Val Ser Gly Ser Ser Lys Asn				
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Glu Glu Leu Asn Phe Leu Ala Arg Leu Met Gly Gly Met Glu Ile Lys				
294	299	304	309	
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Lys Pro Ser Gly Pro Glu Pro Gly Phe Arg Leu Asn Leu Phe Thr Thr				
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gat gaa gaa gag gaa caa gca gcg cta acc agg cca gaa gag tta tcc				1122
Asp Glu Glu Glu Glu Gln Ala Ala Leu Thr Arg Pro Glu Glu Leu Ser				
326	331	336	341	
tat gaa gtt atc aac ata caa gcc acc cag tct ctt ttc agc aat ctg				1170
Tyr Glu Val Ile Asn Ile Gln Ala Thr Gln Ser Leu Phe Ser Asn Leu				
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gcc acc att cag ggg ggc ctg act ggg tga c agatgaatgg gaaggttctg				1221
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 17 22 27 32

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 Ala Leu Gly Arg Val Arg Asp Thr Ala Asp Tyr Val Lys Pro Val Thr
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 Val Lys Pro Val Thr Phe Ser Val Glu Tyr Ser Leu Glu Asp Pro Asp
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 His Gly Pro Met Leu Asp Asp Gly Trp Pro Thr Thr Leu Arg Val Ser
 97 102 107 112

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 Val His Leu Ala Ala Val Ala Thr Lys Arg Val Leu Glu Leu Ala
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Ser Thr Pro Leu Ile Ile Ala Ala Arg Asn Gly His Ala Lys Val Val	
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Arg Leu Leu Leu Glu His Tyr Arg Val Gln Thr Gln Gln Thr Gly Thr	
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Val Arg Phe Asp Gly Tyr Val Ile Asp Gly Ala Thr Ala Leu Trp Cys	
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Gly Ala Asn Val Asn His Thr Thr Val Thr Asn Ser Thr Pro Leu Arg	
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Ala Ala Cys Phe Asp Gly Arg Leu Asp Ile Val Lys Tyr Leu Val Glu	
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Asn Asn Ala Asn Ile Ser Ile Ala Asn Lys Tyr Asp Asn Thr Cys Leu	
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Gly Asp Asn Ile Leu Glu Lys Glu Val Leu Pro Pro Ile His Ala Tyr	
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Val Leu Glu Ile Glu Gln Ser Met Asn Arg Val Lys Asn Ile Ser Asp	
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Thr Gly Ser Gln Ser Ser His Ala Ser Leu Arg Asn Ile His Ser Ile
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Asn Pro Thr Gln Leu Met Ala Arg Ile Glu Ser Tyr Glu Gly Arg Glu
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Tyr Tyr Ser Ser Tyr Phe Asp Ile Phe Leu Leu Ala Val Phe Arg Phe	
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Lys Val Leu Ile Leu Ala Tyr Ala Val Cys Arg Leu Arg His Trp Trp	
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Val Ile Leu Ser Lys Leu Phe Ser Gln Gly Ala Phe Gly Tyr Val Leu	
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Asn Pro Thr Gln Leu Met Ala Arg Ile Glu Ser Tyr Glu Gly Arg Glu
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Met
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Ala Glu Pro Asp Tyr Ile Glu Asp Asp Asn Pro Glu Leu Ile Arg Pro
2 7 12 17

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18 23 28 33

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Val Lys Gly Asn Leu Arg Arg Thr Gly Gln Glu Val Ala Gln Ala Gln	
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 Met Pro Ala Val Lys Lys Pro Phe Leu Gln Gln Phe
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 Met Ala Asn Val Lys Trp Asp Val Lys Glu Ile Met Ser Gln His Asn
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 Ile Tyr Val Asp Ala Leu Leu Lys Glu Phe Glu Gln Phe Asn Arg Arg
 61 66 71 76
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 Gln Leu Asp Phe Gln Gln Phe Leu Met Lys Leu Glu Lys Leu Thr Asp
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Trp Cys Glu Tyr Arg Gly Gln Pro Ser Met Cys Gln Ala Phe Ala Ala	
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Glu Ala Gly Pro Gln Ala His Met Gln Gln Val Thr Ser Ser Leu Lys	
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Gly Ser Pro Glu Pro Asn Gln Gln Pro Glu Ala Gly Thr Pro Ser Leu	
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Ala Lys Pro Thr Gln Pro Gly Pro Arg Pro Gly Gly Asn Glu Glu Ala	
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Met Glu Asn Leu	

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agt aaa gag cct ttg gcc tcc ttt gtt tca gaa tcc ttt gat att tct	283
Ser Lys Glu Pro Leu Ala Ser Phe Val Ser Glu Ser Phe Asp Ile Ser	
5 10 15 20	

gct tgt gga ata gcc aca gag cac gta aaa att gat aac agt ggg gag	331
Ala Cys Gly Ile Ala Thr Glu His Val Lys Ile Asp Asn Ser Gly Glu	
21 26 31 36	

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Gly Leu Thr Ala Glu Ala Gly Ser Glu Thr Leu Ser Arg Asp Gly Glu	
37 42 47 52	

gtc ggt gtg aat tcc gac atg cac tat gaa ctc tct gga gat tct gat	427
Val Gly Val Asn Ser Asp Met His Tyr Glu Leu Ser Gly Asp Ser Asp	
53 58 63 68	

cta gac ctg ctt ggt gat tgt aga aat ccc aga ctg gat ttg gag gat	475
Leu Asp Leu Leu Gly Asp Cys Arg Asn Pro Arg Leu Asp Leu Glu Asp	
69 74 79 84	

tct tat act tta aga ggt agt tac acc agg aaa aaa gat gtt ccc aca	523
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Ser	Tyr	Thr	Leu	Arg	Gly	Ser	Tyr	Thr	Arg	Lys	Lys	Asp	Val	Pro	Thr		
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Asp	Gly	Tyr	Glu	Ser	Ser	Leu	Asn	Phe	His	Asn	Asn	Asn	Gln	Glu	Asp		
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Trp	Gly	Cys	Ser	Ser	Trp	Val	Pro	Gly	Met	Glu	Thr	Ser	Leu	Pro	Pro		
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Gly	His	Trp	Thr	Ala	Ala	Val	Lys	Lys	Glu	Glu	Lys	Cys	Val	Pro	Pro		
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ttc	tct	ata	aca	aaa	gaa	ctc	aaa	gat	acc	atg	aga	act	tca	cac	ggc	763	
Phe	Ser	Ile	Thr	Lys	Glu	Leu	Lys	Asp	Thr	Met	Arg	Thr	Ser	His	Gly		
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ctg	agg	agg	cac	ccg	agt	ttc	agt	gca	aac	tgt	ggc	ctg	ccc	agc	tcc	811	
Leu	Arg	Arg	His	Pro	Ser	Phe	Ser	Ala	Asn	Cys	Gly	Leu	Pro	Ser	Ser		
181					186					191					196		
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Trp	Thr	Ser	Thr	Trp	Gln	Val	Ala	Asp	Asp	Leu	Thr	Gln	Asn	Thr	Leu		
197					202					207					212		
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Asp	Leu	Glu	Tyr	Leu	Arg	Phe	Ala	His	Lys	Leu	Lys	Gln	Thr	Ile	Lys		
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aat	ggg	gat	tct	cag	cat	tct	gcc	tcc	tct	gcc	aat	gtc	ttt	cca	aag	955	
Asn	Gly	Asp	Ser	Gln	His	Ser	Ala	Ser	Ser	Ala	Asn	Val	Phe	Pro	Lys		
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gag	tca	cca	acc	cag	atc	tcc	att	ggt	gct	ttc	cct	tcg	aca	aaa	atc	1003	
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Ser	Glu	Ala	Pro	Phe	Leu	His	Pro	Ala	Pro	Arg	Ser	Arg	Ser	Pro	Leu		
261					266					271					276		
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Leu	Val	Thr	Val	Val	Glu	Ser	Asp	Pro	Arg	Pro	Gln	Gly	Gln	Pro	Arg		
277					282					287					292		
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Arg	Gly	Tyr	Thr	Ala	Ser	Ser	Leu	Asp	Ser	Ser	Ser	Ser	Trp	Arg	Glu		
293					298					303					308		
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Arg	Cys	Ser	His	Asn	Arg	Asp	Leu	Arg	Asn	Ser	Gln	Arg	Asn	His	Thr		

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Val Ser Phe His Leu Asn Lys Leu Lys Tyr Asn Ser Thr Val Lys Glu				
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Ser Arg Asn Asp Ile Ser Leu Ile Leu Asn Glu Tyr Ala Glu Phe Asn				
341	346	351	356	
aag gtg atg aag aat agc aac caa ttc att ttc caa gac aaa gag cta				1339
Lys Val Met Lys Asn Ser Asn Gln Phe Ile Phe Gln Asp Lys Glu Leu				
357	362	367	372	
aat gat gtt tct gga gaa gcc act gct caa gag atg tat ctg cct ttc				1387
Asn Asp Val Ser Gly Glu Ala Thr Ala Gln Glu Met Tyr Leu Pro Phe				
373	378	383	388	
cca gga cgg tca gcc tcc tat gaa gac ata atc ata gac gtg tgc acc				1435
Pro Gly Arg Ser Ala Ser Tyr Glu Asp Ile Ile Ile Asp Val Cys Thr				
389	394	399	404	
aat ttg cac gtc aaa cta aga agt gtt gtg aaa gag gct tgt aaa agt				1483
Asn Leu His Val Lys Leu Arg Ser Val Val Lys Glu Ala Cys Lys Ser				
405	410	415	420	
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Thr Phe Leu Phe Tyr Leu Val Glu Thr Glu Asp Lys Ser Phe Phe Val				
421	426	431	436	
aga aca aag aac ctt ctg agg aaa gga ggc cat aca gaa att gaa cct				1579
Arg Thr Lys Asn Leu Leu Arg Lys Gly Gly His Thr Glu Ile Glu Pro				
437	442	447	452	
cag cac ttc tgt caa gct ttc cac aga gag aat gat aca cta atc atc				1627
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Ile Ile Arg Asn Glu Asp Ile Ser Ser His Leu His Gln Ile Pro Ser				
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Leu Leu Lys Leu Lys His Phe Pro Ser Val Ile Phe Ala Gly Val Asp				
485	490	495	500	
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Ser Pro Gly Asp Val Leu Asp His Thr Tyr Gln Glu Leu Phe Arg Ala				
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Gly Gly Phe Val Ile Ser Asp Asp Lys Ile Leu Glu Ala Val Thr Leu				
517	522	527	532	
gtt caa ctg aag gaa att atc aaa atc ctg gaa aaa cta aat gga aat				1867
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Gly Arg Trp Lys Trp Leu Leu His Tyr Arg Glu Asn Lys Lys Leu Lys	
549 554 559 564	
gaa gat gaa aga gtg gat tca act gca cat aag aag aac ata atg ttg	1963
Glu Asp Glu Arg Val Asp Ser Thr Ala His Lys Lys Asn Ile Met Leu	
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Lys Ser Phe Gln Ser Ala Asn Ile Ile Glu Leu Leu His Tyr His Gln	
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Cys Asp Ser Arg Ser Ser Thr Lys Ala Glu Ile Leu Lys Cys Leu Leu	
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Asn Leu Gln Ile Gln His Ile Asp Ala Arg Phe Ala Val Leu Leu Thr	
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Pro Phe Arg Ser Ser Tyr Trp *	
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cgg gac ggg aac aaa tca caa gac agt ggc ata gca gag atg gaa gaa      381
Arg Asp Gly Asn Lys Ser Gln Asp Ser Gly Ile Ala Glu Met Glu Glu
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Leu Pro Val Pro His Asn Ile Lys Ile Ser Asn Ile Thr Cys Asp Ser
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Phe Lys Ile Ser Trp Glu Met Asp Ser Lys Ser Lys Asp Arg Ile Thr
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cac tat ttt att gac ctc aac aag aaa gag aac aag aac tcc aat aaa      525
His Tyr Phe Ile Asp Leu Asn Lys Lys Glu Asn Lys Asn Ser Asn Lys
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ttt aaa cac aag gat gtt ccc aca aaa ttg gtg gca aaa gct gtt ccc      573
Phe Lys His Lys Asp Val Pro Thr Lys Leu Val Ala Lys Ala Val Pro
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ttg cct atg act gtc cgt gga cac tgg ttt tta agc cca aga act gaa      621
Leu Pro Met Thr Val Arg Gly His Trp Phe Leu Ser Pro Arg Thr Glu
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Ser Lys Val His Leu Thr Gln Leu Leu Glu Lys Ala Glu Val Ile Ala				
162	167	172	177	
gga cgc atg ctt aag ttt tct gtt ttt tat cgt aat cag cac aaa gaa				813
Gly Arg Met Leu Lys Phe Ser Val Phe Tyr Arg Asn Gln His Lys Glu				
178	183	188	193	
tat ttt gac tat gtt cga gaa cat cat ggg aat gct atg cag cca tct				861
Tyr Phe Asp Tyr Val Arg Glu His His Gly Asn Ala Met Gln Pro Ser				
194	199	204	209	
gtc aag gat aac agt ggt agc cat ggc tct cct atc agt gga aaa tta				909
Val Lys Asp Asn Ser Gly Ser His Gly Ser Pro Ile Ser Gly Lys Leu				
210	215	220	225	
gaa ggc atc ttc ttc agc tgc agc act gaa ttc aat act gga aag cca				957
Glu Gly Ile Phe Phe Ser Cys Ser Thr Glu Phe Asn Thr Gly Lys Pro				
226	231	236	241	
ccc cag gat tca cct tat gga aga tac agg ttt gag att gcc gca gaa				1005
Pro Gln Asp Ser Pro Tyr Gly Arg Tyr Arg Phe Glu Ile Ala Ala Glu				
242	247	252	257	
aaa ctt ttt aac ccc aat act aac tta tac ttt ggg gac ttc tac tgt				1053
Lys Leu Phe Asn Pro Asn Thr Asn Leu Tyr Phe Gly Asp Phe Tyr Cys				
258	263	268	273	
atg tac act gct tat cat tat gtg att ctt gtt att gct cct gtg gga				1101
Met Tyr Thr Ala Tyr His Tyr Val Ile Leu Val Ile Ala Pro Val Gly				
274	279	284	289	
tca cca gga gat gaa ttt tgt aag cag cgc ctt cct caa cta aat tct				1149
Ser Pro Gly Asp Glu Phe Cys Lys Gln Arg Leu Pro Gln Leu Asn Ser				
290	295	300	305	
aag gat aat aaa ttt ttg acc tgt aca gaa gaa gat ggg gtg ctg gtt				1197
Lys Asp Asn Lys Phe Leu Thr Cys Thr Glu Glu Asp Gly Val Leu Val				
306	311	316	321	
tac cac cat gcc cag gat gtc att tta gaa gtc att tac act gac cct				1245
Tyr His His Ala Gln Asp Val Ile Leu Glu Val Ile Tyr Thr Asp Pro				
322	327	332	337	
gtg gat ctt tct ctg ggc acc gtg gca gaa atc act ggt cat cag ctc				1293
Val Asp Leu Ser Leu Gly Thr Val Ala Glu Ile Thr Gly His Gln Leu				
338	343	348	353	
atg agt ttg tct act gca aat gca aag aaa gat ccc agc tgc aaa acc				1341
Met Ser Leu Ser Thr Ala Asn Ala Lys Lys Asp Pro Ser Cys Lys Thr				
354	359	364	369	

tgt aat atc agt gtt gga cgt taa tgcccacttt cctatttccc taccctccc 1395
 Cys Asn Ile Ser Val Gly Arg *
 370 375

actactttca atgatgaaat accctaagtt aagttctcct ttgacactt tattgcgtag 1455
 atgctgcaat gtttttatgt ttcctttatg ccaaacataa caaaacagtt atatagactg 1515
 ctttagcaaa gtacacaata atggcttata aatgggtgttt aaatatgcat tcattttaat 1575
 ctactgaaca aatattggga taactccaaa ccgcatgaaa ggggtgtaatt gcagcatgag 1635
 ttaaactcttg aagcctagaa ttgtcagcac ttccaacttc ttgtttgaca gtgttattta 1695
 tgttatttat attagctaac aggaacaac tactgtgttt caacataata aatataatag 1755
 aaaaataaaaa aaaaaaaaa 1773

<210> 985
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 <213> Homo sapiens

<220>
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 <222> (287) .. (1912)

<400> 985

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 gcgctgcgct cgctccgctg cggctccgcg tgccccacct tctggctagt tttttctaga 180
 gccaggctc cgcccgtttc ccgcttcag ggcccggttc gttcccgccc gcaccgctcc 240
 ctctcctctg caccctgct gcttctgctt tgaaggcgga ggctcc atg ttg tcc 295
 Met Leu Ser
 1

cct cag cga gtg gca gca gct gcc tca aga gga gca gat gat gcc atg 343
 Pro Gln Arg Val Ala Ala Ala Ser Arg Gly Ala Asp Asp Ala Met
 4 9 14 19

gag agc agc aag cct ggt cca gtg cag gtt gtt ttg gtt cag aaa gat 391
 Glu Ser Ser Lys Pro Gly Pro Val Gln Val Val Leu Val Gln Lys Asp
 20 25 30 35

caa cat tcc ttt gag cta gat gag aaa gcc ttg gcc agc atc ctc ttg 439
 Gln His Ser Phe Glu Leu Asp Glu Lys Ala Leu Ala Ser Ile Leu Leu
 36 41 46 51

cag gac cac atc cga gat ctt gat gtg gtg gtg gtt tca gtg gct ggt 487

Gln	Asp	His	Ile	Arg	Asp	Leu	Asp	Val	Val	Val	Val	Ser	Val	Ala	Gly		
52					57					62					67		
gcc	ttc	cga	aag	ggc	aag	tcc	ttc	att	ctg	gat	ttt	atg	cta	cga	tac		535
Ala	Phe	Arg	Lys	Gly	Lys	Ser	Phe	Ile	Leu	Asp	Phe	Met	Leu	Arg	Tyr		
68					73					78					83		
tta	tat	tct	cag	aag	gaa	agt	ggc	cat	tca	aat	tgg	ttg	ggt	gac	cca		583
Leu	Tyr	Ser	Gln	Lys	Glu	Ser	Gly	His	Ser	Asn	Trp	Leu	Gly	Asp	Pro		
84					89					94					99		
gaa	gaa	ccg	tta	aca	gga	ttt	tcc	tgg	aga	ggg	gga	tct	gat	cca	gaa		631
Glu	Glu	Pro	Leu	Thr	Gly	Phe	Ser	Trp	Arg	Gly	Gly	Ser	Asp	Pro	Glu		
100					105					110					115		
acc	act	ggg	att	caa	atc	tgg	agt	gaa	gtt	ttc	act	gtg	gag	aag	cca		679
Thr	Thr	Gly	Ile	Gln	Ile	Trp	Ser	Glu	Val	Phe	Thr	Val	Glu	Lys	Pro		
116					121					126					131		
ggt	ggg	aag	aag	gtt	gca	gtt	gtt	ctg	atg	gat	acc	cag	ggg	gca	ttt		727
Gly	Gly	Lys	Lys	Val	Ala	Val	Val	Leu	Met	Asp	Thr	Gln	Gly	Ala	Phe		
132					137					142					147		
gac	agc	cag	tca	act	gtg	aaa	gac	tgt	gct	acc	atc	ttt	gct	cta	agc		775
Asp	Ser	Gln	Ser	Thr	Val	Lys	Asp	Cys	Ala	Thr	Ile	Phe	Ala	Leu	Ser		
148					153					158					163		
act	atg	act	agt	tct	gtt	cag	att	tat	aat	tta	tct	cag	aac	att	caa		823
Thr	Met	Thr	Ser	Ser	Val	Gln	Ile	Tyr	Asn	Leu	Ser	Gln	Asn	Ile	Gln		
164					169					174					179		
gaa	gat	gat	ctt	caa	cag	ctg	cag	ctc	ttc	aca	gaa	tac	ggt	cgt	ctg		871
Glu	Asp	Asp	Leu	Gln	Gln	Leu	Gln	Leu	Phe	Thr	Glu	Tyr	Gly	Arg	Leu		
180					185					190					195		
gca	atg	gat	gaa	att	ttc	caa	aag	cct	ttc	cag	aca	ctg	atg	ttt	ttg		919
Ala	Met	Asp	Glu	Ile	Phe	Gln	Lys	Pro	Phe	Gln	Thr	Leu	Met	Phe	Leu		
196					201					206					211		
gtt	aga	gat	tgg	agt	ttc	cct	tat	gaa	tat	agc	tat	gga	ctc	caa	gga		967
Val	Arg	Asp	Trp	Ser	Phe	Pro	Tyr	Glu	Tyr	Ser	Tyr	Gly	Leu	Gln	Gly		
212					217					222					227		
gga	atg	gca	ttt	ttg	gat	aag	cgt	tta	cag	gtg	aag	gaa	cat	caa	cat		1015
Gly	Met	Ala	Phe	Leu	Asp	Lys	Arg	Leu	Gln	Val	Lys	Glu	His	Gln	His		
228					233					238					243		
gaa	gaa	att	cag	aat	gtt	cga	aat	cac	att	cac	tca	tgt	ttc	tcc	gat		1063
Glu	Glu	Ile	Gln	Asn	Val	Arg	Asn	His	Ile	His	Ser	Cys	Phe	Ser	Asp		
244					249					254					259		
gtc	acc	tgc	ttt	ctc	tta	cca	cat	cca	gga	ctc	cag	gtg	gcc	aca	agc		1111
Val	Thr	Cys	Phe	Leu	Leu	Pro	His	Pro	Gly	Leu	Gln	Val	Ala	Thr	Ser		
260					265					270					275		
cct	gac	ttt	gat	ggg	aaa	tta	aaa	gat	att	gct	ggt	gaa	ttc	aaa	gag		1159
Pro	Asp	Phe	Asp	Gly	Lys	Leu	Lys	Asp	Ile	Ala	Gly	Glu	Phe	Lys	Glu		

276	281	286	291	
cag tta cag gca ctg ata ccg tat gta tta aac cca tct aag tta atg				1207
Gln Leu Gln Ala Leu Ile Pro Tyr Val Leu Asn Pro Ser Lys Leu Met				
292	297	302	307	
gaa aag gag atc aat ggc tca aag gtc acc tgt cgg gga cta ctg gag				1255
Glu Lys Glu Ile Asn Gly Ser Lys Val Thr Cys Arg Gly Leu Leu Glu				
308	313	318	323	
tat ttt aag gca tat att aaa att tat caa gga gaa gat ctg cct cac				1303
Tyr Phe Lys Ala Tyr Ile Lys Ile Tyr Gln Gly Glu Asp Leu Pro His				
324	329	334	339	
ccc aag tcc atg ctt cag gcc act gct gaa gcc tac aac tta gca gct				1351
Pro Lys Ser Met Leu Gln Ala Thr Ala Glu Ala Tyr Asn Leu Ala Ala				
340	345	350	355	
gca gcc tct gcc aag gac att tat tat aac aac atg gaa gag gtt tgt				1399
Ala Ala Ser Ala Lys Asp Ile Tyr Tyr Asn Asn Met Glu Glu Val Cys				
356	361	366	371	
ggg gga gag aaa cct tat ttg tct cca gac att cta gag gag aag cac				1447
Gly Gly Glu Lys Pro Tyr Leu Ser Pro Asp Ile Leu Glu Glu Lys His				
372	377	382	387	
tgt gaa ttc aaa caa ctt gct ctg gac cat ttt aag aag acc aag aag				1495
Cys Glu Phe Lys Gln Leu Ala Leu Asp His Phe Lys Lys Thr Lys Lys				
388	393	398	403	
atg ggt ggg aag gat ttc agc ttt cgt tac cag cag gag ctg gag gag				1543
Met Gly Gly Lys Asp Phe Ser Phe Arg Tyr Gln Gln Glu Leu Glu Glu				
404	409	414	419	
gaa atc aag gaa tta tat gag aac ttc tgc aag cac aat ggt agc aag				1591
Glu Ile Lys Glu Leu Tyr Glu Asn Phe Cys Lys His Asn Gly Ser Lys				
420	425	430	435	
aac gtc ttc agc acc ttc cga acc cct gca gtg ctg ttc acg ggc att				1639
Asn Val Phe Ser Thr Phe Arg Thr Pro Ala Val Leu Phe Thr Gly Ile				
436	441	446	451	
gta gct ttg tac ata gcc tca ggc ctc act ggc ttc ata ggt ctt gag				1687
Val Ala Leu Tyr Ile Ala Ser Gly Leu Thr Gly Phe Ile Gly Leu Glu				
452	457	462	467	
gtt gta gcc cag ttg ttc aac tgt atg gtt gga cta ctg tta ata gca				1735
Val Val Ala Gln Leu Phe Asn Cys Met Val Gly Leu Leu Leu Ile Ala				
468	473	478	483	
ctc ctc acc tgg ggc tac atc agg tat tct ggt caa tat cgt gag ctg				1783
Leu Leu Thr Trp Gly Tyr Ile Arg Tyr Ser Gly Gln Tyr Arg Glu Leu				
484	489	494	499	
ggc gga gct att gat ttt ggt gcc gca tat gtg ttg gag cag gct tct				1831
Gly Gly Ala Ile Asp Phe Gly Ala Ala Tyr Val Leu Glu Gln Ala Ser				
500	505	510	515	

tct cat atc ggt aat tcc act cag gcc act gtg agg gat gca gtt gtt	1879
Ser His Ile Gly Asn Ser Thr Gln Ala Thr Val Arg Asp Ala Val Val	
516 521 526 531	
gga aga cca tcc atg gat aaa aaa gct caa tag catcttaa cgtgaagatc	1930
Gly Arg Pro Ser Met Asp Lys Lys Ala Gln *	
532 537 542	
aaacaagaac acaacaagcc cctactgatt tctgggtttc tgccacggcc acaggttcat	1990
atccagagga atggcagatc tgagacgac caggaagagc taaaacatgg ccctgtaata	2050
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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (46) .. (708)

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	Met Ala Ser
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gcc gga atg cag atc ctg gga gtc gtc ctg aca ctg ctg ggc tgg gtg	102
Ala Gly Met Gln Ile Leu Gly Val Val Leu Thr Leu Leu Gly Trp Val	
4 9 14 19	
aat ggc ctg gtc tcc tgt gcc ctg ccc atg tgg aag gtg acc gct ttc	150
Asn Gly Leu Val Ser Cys Ala Leu Pro Met Trp Lys Val Thr Ala Phe	
20 25 30 35	
atc ggc aac agc atc gtg gtg gcc cag gtg gtg tgg gag ggc ctg tgg	198
Ile Gly Asn Ser Ile Val Val Ala Gln Val Val Trp Glu Gly Leu Trp	
36 41 46 51	
atg tcc tgc gtg gtg cag agc acc ggc cag atg cag tgc aag gtg tac	246
Met Ser Cys Val Val Gln Ser Thr Gly Gln Met Gln Cys Lys Val Tyr	
52 57 62 67	
gac tca ctg ctg gcg ctg cca cag gac ctg cag gct gca cgt gcc ctc	294
Asp Ser Leu Leu Ala Leu Pro Gln Asp Leu Gln Ala Ala Arg Ala Leu	
68 73 78 83	
tgt gtc atc gcc ctc ctt gtg gcc ctg ttc ggc ttg ctg gtc tac ctt	342
Cys Val Ile Ala Leu Leu Val Ala Leu Phe Gly Leu Leu Val Tyr Leu	
84 89 94 99	
gct ggg gcc aag tgt acc acc tgt gtg gag gag aag gat tcc aag gcc	390

Ala Gly Ala Lys Cys Thr Thr Cys Val Glu Glu Lys Asp Ser Lys Ala	
100 105 110 115	
cgc ctg gtg ctc acc tct ggg att gtc ttt gtc atc tca ggg gtc ctg	438
Arg Leu Val Leu Thr Ser Gly Ile Val Phe Val Ile Ser Gly Val Leu	
116 121 126 131	
acg cta atc ccc gtg tgc tgg acg gcg cat gcc gtc atc cgg gac ttc	486
Thr Leu Ile Pro Val Cys Trp Thr Ala His Ala Val Ile Arg Asp Phe	
132 137 142 147	
tat aac ccc ctg gtg gct gag gcc caa aag cgg gag ctg ggg gcc tcc	534
Tyr Asn Pro Leu Val Ala Glu Ala Gln Lys Arg Glu Leu Gly Ala Ser	
148 153 158 163	
ctc tac ttg ggc tgg gcg gcc tca ggc ctt ttg ttg ctg ggt ggg ggg	582
Leu Tyr Leu Gly Trp Ala Ala Ser Gly Leu Leu Leu Leu Gly Gly Gly	
164 169 174 179	
ttg ctg tgc tgc act tgc ccc tcg ggg ggg tcc cag ggc ccc agc cat	630
Leu Leu Cys Cys Thr Cys Pro Ser Gly Gly Ser Gln Gly Pro Ser His	
180 185 190 195	
tac atg gcc cgc tac tca aca tct gcc cct gcc atc tct cgg ggg ccc	678
Tyr Met Ala Arg Tyr Ser Thr Ser Ala Pro Ala Ile Ser Arg Gly Pro	
196 201 206 211	
tct gag tac cct acc aag aat tac gtc tga	708
Ser Glu Tyr Pro Thr Lys Asn Tyr Val *	
212 217	

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 <212> DNA
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<220>
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cgactgcgc tatggcccgg cgggtgtggc gggctgggcg ataaaatcag ttgctcgccg	180
accgctgaaa atgttgctgg ctgtggcgct ggaaccgctg ttaagtcggg ctgctaataa	240
actggcacag cggtataaaa ggtgagggga gtttcgcaaa aattgttaaa tctcaggcgt	300
ataatggatg gcaattttca tccatagaag gacgcttac atg ttt aaa aaa ggc	354
Met Phe Lys Lys Gly	

tta ctt gct ctg gca ctg gtg ttt tca ctg ccc gtt ttc gcc gct gaa	402
Leu Leu Ala Leu Ala Leu Val Phe Ser Leu Pro Val Phe Ala Ala Glu	
6 11 16 21	
cac tgg atc gat gtt cgt gtt cca gag cag tat cag caa gag cac gtt	450
His Trp Ile Asp Val Arg Val Pro Glu Gln Tyr Gln Gln Glu His Val	
22 27 32 37	
cag ggg gcc atc aat att ccc ctg aag gaa gtg aaa gag cgc att gcc	498
Gln Gly Ala Ile Asn Ile Pro Leu Lys Glu Val Lys Glu Arg Ile Ala	
38 43 48 53	
acc gcc gtt ccg gat aaa aac gac acc gtg aaa gtg tat tgc aat gcc	546
Thr Ala Val Pro Asp Lys Asn Asp Thr Val Lys Val Tyr Cys Asn Ala	
54 59 64 69	
gga cgc cag tca ggg caa gca aaa gag atc ctt agc gag atg gga tat	594
Gly Arg Gln Ser Gly Gln Ala Lys Glu Ile Leu Ser Glu Met Gly Tyr	
70 75 80 85	
acc cac gtt gag aac gcc ggt ggc ctg aaa gac atc gca atg ccg aag	642
Thr His Val Glu Asn Ala Gly Gly Leu Lys Asp Ile Ala Met Pro Lys	
86 91 96 101	
gtc aaa ggt taa agaattcctg caga	668
Val Lys Gly *	
102	

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tcccaggccc gcgaacttgg ccattcagcc gccgctgtcc ccgctgcgcg cctcgcgcgc	120
tctgcctgag aagccaggcg ctgttcccc accccagaag agg atg gca aag gtg	175
Met Ala Lys Val	
1	
gct aag gac ctc aac cca gga gtt aaa aag atg tcc ctg ggc cag ctg	223
Ala Lys Asp Leu Asn Pro Gly Val Lys Lys Met Ser Leu Gly Gln Leu	
5 10 15 20	
cag tca gca aga ggt gtg gca tgt ttg gga tgc aag ggg acg tgt tcg	271

Gln	Ser	Ala	Arg	Gly	Val	Ala	Cys	Leu	Gly	Cys	Lys	Gly	Thr	Cys	Ser		
21					26					31					36		
ggc	ttc	gag	cca	cat	tca	tgg	agg	aaa	ata	tgc	aag	tct	tgc	aaa	tgc		319
Gly	Phe	Glu	Pro	His	Ser	Trp	Arg	Lys	Ile	Cys	Lys	Ser	Cys	Lys	Cys		
37					42					47					52		
agc	caa	gag	gac	cac	tgc	cta	aca	tct	gac	cta	gaa	gac	gat	cgg	aaa		367
Ser	Gln	Glu	Asp	His	Cys	Leu	Thr	Ser	Asp	Leu	Glu	Asp	Asp	Arg	Lys		
53					58					63					68		
att	ggc	cgc	ttg	ctg	atg	gac	tcc	aag	tat	tcc	acc	ctc	act	gct	cgg		415
Ile	Gly	Arg	Leu	Leu	Met	Asp	Ser	Lys	Tyr	Ser	Thr	Leu	Thr	Ala	Arg		
69					74					79					84		
gtg	aaa	ggc	ggg	gac	ggc	atc	cgg	att	tac	aag	agg	aac	cgg	atg	atc		463
Val	Lys	Gly	Gly	Asp	Gly	Ile	Arg	Ile	Tyr	Lys	Arg	Asn	Arg	Met	Ile		
85					90					95					100		
atg	acc	aac	cct	att	gct	act	ggg	aaa	gat	ccc	act	ttt	gac	acc	atc		511
Met	Thr	Asn	Pro	Ile	Ala	Thr	Gly	Lys	Asp	Pro	Thr	Phe	Asp	Thr	Ile		
101					106					111					116		
acc	tac	gag	tgg	gct	ccc	cct	gga	gtc	acc	cag	aaa	ctg	gga	ctg	cag		559
Thr	Tyr	Glu	Trp	Ala	Pro	Pro	Gly	Val	Thr	Gln	Lys	Leu	Gly	Leu	Gln		
117					122					127					132		
tac	atg	gag	ctc	atc	ccc	aag	gag	aag	cag	cca	gtg	aca	ggc	aca	gag		607
Tyr	Met	Glu	Leu	Ile	Pro	Lys	Glu	Lys	Gln	Pro	Val	Thr	Gly	Thr	Glu		
133					138					143					148		
ggt	gcc	ttt	tac	cgc	cgc	cgc	cag	ctc	atg	cac	cag	ctc	ccc	atc	tat		655
Gly	Ala	Phe	Tyr	Arg	Arg	Arg	Gln	Leu	Met	His	Gln	Leu	Pro	Ile	Tyr		
149					154					159					164		
gac	cag	gat	ccc	tcg	cgc	tgc	cgt	gga	ctt	ttg	gag	aat	gag	ttg	aaa		703
Asp	Gln	Asp	Pro	Ser	Arg	Cys	Arg	Gly	Leu	Leu	Glu	Asn	Glu	Leu	Lys		
165					170					175					180		
ctg	atg	gaa	gaa	ttt	gtc	aag	caa	tat	aag	agc	gag	gcc	ctc	ggc	gtg		751
Leu	Met	Glu	Glu	Phe	Val	Lys	Gln	Tyr	Lys	Ser	Glu	Ala	Leu	Gly	Val		
181					186					191					196		
gga	gaa	gtg	gcc	ctc	ccg	ggg	cag	ggt	ggc	ttg	ccc	aag	gag	gag	ggg		799
Gly	Glu	Val	Ala	Leu	Pro	Gly	Gln	Gly	Gly	Leu	Pro	Lys	Glu	Glu	Gly		
197					202					207					212		
aag	cag	cag	gaa	aag	cca	gag	ggg	gca	gag	acc	act	gct	gct	acc	acc		847
Lys	Gln	Gln	Glu	Lys	Pro	Glu	Gly	Ala	Glu	Thr	Thr	Ala	Ala	Thr	Thr		
213					218					223					228		
aac	ggc	agt	ctc	agt	gac	ccg	tcc	aaa	gaa	gtg	gaa	tac	gtc	tgc	gag		895
Asn	Gly	Ser	Leu	Ser	Asp	Pro	Ser	Lys	Glu	Val	Glu	Tyr	Val	Cys	Glu		
229					234					239					244		
ctc	tgc	aag	gga	gcg	gcc	cct	cct	gac	agc	ccc	gtg	gtc	tac	tcg	gac		943
Leu	Cys	Lys	Gly	Ala	Ala	Pro	Pro	Asp	Ser	Pro	Val	Val	Tyr	Ser	Asp		

245	250	255	260	
agg gca ggc tac aac aag cag tgg cac ccc acc tgc ttt gtg tgt gcc				991
Arg Ala Gly Tyr Asn Lys Gln Trp His Pro Thr Cys Phe Val Cys Ala				
261	266	271	276	
aag tgc tcc gag ccg ctg gtg gac ctc atc tac ttc tgg aag gat ggt				1039
Lys Cys Ser Glu Pro Leu Val Asp Leu Ile Tyr Phe Trp Lys Asp Gly				
277	282	287	292	
gca ccc tgg tgc ggc cgc cat tac tgc gag agt ctg cgg ccc cgg tgc				1087
Ala Pro Trp Cys Gly Arg His Tyr Cys Glu Ser Leu Arg Pro Arg Cys				
293	298	303	308	
tcc ggc tgc gat gag ata ata ttc gct gag gac tac cag cgt gtg gaa				1135
Ser Gly Cys Asp Glu Ile Ile Phe Ala Glu Asp Tyr Gln Arg Val Glu				
309	314	319	324	
gat ctg gcc tgg cac cga aag cac ttt gtc tgt gag ggt tgt gag cag				1183
Asp Leu Ala Trp His Arg Lys His Phe Val Cys Glu Gly Cys Glu Gln				
325	330	335	340	
ctg ctg agc ggc cgg gcg tac atc gtc acc aag ggt cag ctt ctg tgc				1231
Leu Leu Ser Gly Arg Ala Tyr Ile Val Thr Lys Gly Gln Leu Leu Cys				
341	346	351	356	
cca act tgc agc aag tcc aaa cgc tcc tga a gggctgccca cccacagcca				1282
Pro Thr Cys Ser Lys Ser Lys Arg Ser *				
357	362			
gaatccacag gatcccaccg agaaggagag ccaggtgtgc cgagaccatc ctaaggggtcc				1342
gatgtgacag caagcaagtg aaataaacia tgatttgctt ttcagtgaga atatatatat				1402
gagatatata tagatatata ttctaggttg ggtgggtggta gatacttgag ggtcagtagt				1462
ttcaaaacca aaaatattct aagaagtctt aggatggagt tccttttctt tctgttggtg				1522
tttcccagct acaaccaact aaagacacaa atggcgcttct gcaagggggac tctgggagga				1582
gttttccaga atgcaattcc gagtgagcaa atcgcatagc tgtagaatgt gcgtgctttt				1642
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ataaaagttt tgtgaattcc aaaaaaaaaa aa				1794

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<220>

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<222> (881)..(2122)

<400> 989

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ctgccctgcc ccggatttca ttccgcggcg ggggctccgc gagcgggaatt ccggcggctg      180
ccgtgactcc agtgcaacgt gacgacagca tgtacgatcc ctgaatgggc ccgtgggcat      240
atttagtcat tcatttttga tcaggagaaa gaagacagcc atcatttgaa aggtaaagct      300
tcagcgactg aaggagtgtg gactttttga atttcaagaa cagtaaagtt ggaacacagc      360
agaggggtgtg taataaaata cagattggaa agaagactga tgaagaaaaa taacagcatg      420
attcaggcac accattgagt tctttgggat gcccgaaagt gtctggttgg gaaacatgaa      480
atagaagacg agaacctgcc tcagcaagcg tacctgagaa tactttttaa ggaacctgtt      540
gataaatgca aaacagtggc tgttgcaggt gatggaactg tactggaaca atgggagaag      600
ctggtagctt ataggaagcc aagatgacca gaatgttttt aaataatcca aggaagaatc      660
ctgctcaaaa atgaggtgaa ttaatacttg ggcgctcagg aacctggac agctacatga      720
gggtgtttaa aactgccctg accatcttgc caaacaagtc tctgctcatg aggccccaca      780
ggatgaacga gccgaggcag gacagtgtcc tgccctgtcg gaacagtgac tgctgacctg      840
ccaagagaga gctggggact gcctgctgtc tgccagtaca atg aag gaa gtg gtt      895
                                   Met Lys Glu Val Val
                                   1

tat tgg tca ccc aag aag gtg gca gac tgg ctg ctg gag aat gct atg      943
Tyr Trp Ser Pro Lys Lys Val Ala Asp Trp Leu Leu Glu Asn Ala Met
   6                11                16                21

cca gaa tac tgt gag cct ctg gag cat ttc aca ggc cag gac ttg atc      991
Pro Glu Tyr Cys Glu Pro Leu Glu His Phe Thr Gly Gln Asp Leu Ile
  22                27                32                37

aac cta acc caa gag gat ttc aaa aaa ccc ccc ttg tgc cga gtc tcc     1039
Asn Leu Thr Gln Glu Asp Phe Lys Lys Pro Pro Leu Cys Arg Val Ser
  38                43                48                53

tct gac aac ggg cag cgg ctc ctg gac atg ata gaa acc ctg aaa atg     1087
Ser Asp Asn Gly Gln Arg Leu Leu Asp Met Ile Glu Thr Leu Lys Met
  54                59                64                69

gag cac cat ttg gaa gca cac aag aac ggc cat gcc aat ggg cac ctc     1135
Glu His His Leu Glu Ala His Lys Asn Gly His Ala Asn Gly His Leu
  70                75                80                85

aac att ggc gta gac atc ccc acc ccc gac ggc agc ttc agc atc aag     1183
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Asn	Ile	Gly	Val	Asp	Ile	Pro	Thr	Pro	Asp	Gly	Ser	Phe	Ser	Ile	Lys	
86					91					96					101	
att	aaa	ccc	aac	ggg	atg	cca	aat	ggg	tat	agg	aaa	gag	atg	ata	aag	1231
Ile	Lys	Pro	Asn	Gly	Met	Pro	Asn	Gly	Tyr	Arg	Lys	Glu	Met	Ile	Lys	
102					107					112					117	
atc	ccc	atg	cca	gaa	ctg	gag	cgc	tct	cag	tac	ccc	atg	gag	tgg	ggc	1279
Ile	Pro	Met	Pro	Glu	Leu	Glu	Arg	Ser	Gln	Tyr	Pro	Met	Glu	Trp	Gly	
118					123					128					133	
aag	act	ttt	ctg	gcc	ttt	ctt	tat	gca	ctt	tcc	tgt	ttc	gtt	ctc	acc	1327
Lys	Thr	Phe	Leu	Ala	Phe	Leu	Tyr	Ala	Leu	Ser	Cys	Phe	Val	Leu	Thr	
134					139					144					149	
aca	gtg	atg	atc	tgc	gtc	gtc	cac	gaa	cga	gta	cct	cct	aag	gag	gtg	1375
Thr	Val	Met	Ile	Ser	Val	Val	His	Glu	Arg	Val	Pro	Pro	Lys	Glu	Val	
150					155					160					165	
cag	cct	cca	cta	ccg	gac	aca	ttt	ttt	gac	cat	ttt	aac	cgg	gtg	cag	1423
Gln	Pro	Pro	Leu	Pro	Asp	Thr	Phe	Phe	Asp	His	Phe	Asn	Arg	Val	Gln	
166					171					176					181	
tgg	gcc	ttt	tct	att	tgt	gaa	att	aat	ggc	atg	atc	ctt	gta	gga	ctc	1471
Trp	Ala	Phe	Ser	Ile	Cys	Glu	Ile	Asn	Gly	Met	Ile	Leu	Val	Gly	Leu	
182					187					192					197	
tgg	tta	att	cag	tgg	ctg	ctc	tta	aaa	tac	aag	tct	att	att	agc	aga	1519
Trp	Leu	Ile	Gln	Trp	Leu	Leu	Leu	Lys	Tyr	Lys	Ser	Ile	Ile	Ser	Arg	
198					203					208					213	
aga	ttt	ttc	tgc	ata	gtt	ggc	acg	ctg	tac	ctg	tat	cgg	tgt	att	aca	1567
Arg	Phe	Phe	Cys	Ile	Val	Gly	Thr	Leu	Tyr	Leu	Tyr	Arg	Cys	Ile	Thr	
214					219					224					229	
atg	tat	gta	act	aca	ctc	cca	gta	cct	ggg	atg	cat	ttc	aac	tgt	tct	1615
Met	Tyr	Val	Thr	Thr	Leu	Pro	Val	Pro	Gly	Met	His	Phe	Asn	Cys	Ser	
230					235					240					245	
ccg	aag	ctt	ttc	gga	gac	tgg	gaa	gcc	caa	ctg	cga	aga	ata	atg	aag	1663
Pro	Lys	Leu	Phe	Gly	Asp	Trp	Glu	Ala	Gln	Leu	Arg	Arg	Ile	Met	Lys	
246					251					256					261	
ctc	att	gct	gga	ggg	ggc	ttg	tct	atc	act	ggc	tct	cac	aac	atg	tgt	1711
Leu	Ile	Ala	Gly	Gly	Gly	Leu	Ser	Ile	Thr	Gly	Ser	His	Asn	Met	Cys	
262					267					272					277	
ggg	gac	tat	ctg	tac	agc	ggc	cac	acg	gtc	atg	cta	aca	ctt	acc	tac	1759
Gly	Asp	Tyr	Leu	Tyr	Ser	Gly	His	Thr	Val	Met	Leu	Thr	Leu	Thr	Tyr	
278					283					288					293	
tta	ttt	atc	aaa	gag	tat	tcc	cct	cgg	cga	ctc	tgg	tgg	tat	cac	tgg	1807
Leu	Phe	Ile	Lys	Glu	Tyr	Ser	Pro	Arg	Arg	Leu	Trp	Trp	Tyr	His	Trp	
294					299					304					309	
att	tgc	tgg	ctt	ctc	agc	gta	gtt	gga	atc	ttc	tgt	att	ctc	tta	gcg	1855
Ile	Cys	Trp	Leu	Leu	Ser	Val	Val	Gly	Ile	Phe	Cys	Ile	Leu	Leu	Ala	

310	315	320	325	
cat gac cac tac act	gtg gac gtg gtg gtg	gca tat tac atc acc	acg	1903
His Asp His Tyr Thr	Val Asp Val Val Val	Ala Tyr Tyr Ile Thr	Thr	
326	331	336	341	
aga ctc ttc tgg tgg	tat cac act atg gcc	aat cag caa gtg cta	aag	1951
Arg Leu Phe Trp Trp	Tyr His Thr Met Ala	Asn Gln Gln Val Leu	Lys	
342	347	352	357	
gaa gct tcc cag atg	aac ctc ctg gcc agg	gtg tgg tgg tac agg	cca	1999
Glu Ala Ser Gln Met	Asn Leu Leu Ala Arg	Val Trp Trp Tyr Arg	Pro	
358	363	368	373	
ttt cag tac ttt gaa	aag aat gtc caa gga	att gta cct cga tct	tac	2047
Phe Gln Tyr Phe Glu	Lys Asn Val Gln Gly	Ile Val Pro Arg Ser	Tyr	
374	379	384	389	
cat tgg cct ttc ccc	tgg cca gta gtc cac	ctc agt agg caa gtt	aaa	2095
His Trp Pro Phe Pro	Trp Pro Val Val His	Leu Ser Arg Gln Val	Lys	
390	395	400	405	
tac agc cgg ctg gtg	aat gac aca taa cagct	gtacaaagtg gggaaaagac		2147
Tyr Ser Arg Leu Val	Asn Asp Thr *			
406	411			
aaattgtccg aagtgctaag	aactccatga gagaagatgc	cataaaataa acacctccct		2207
aatcctatta tttttcaatg	gttaccttga cttaacctat	tgagttacct ggtcagcact		2267
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tgacccgcgc ctgcgaaagc	120
caaacaccag agcaccctag	aaggtttaac taaaaga
atg ctc atg ttt gac cca	175
Met Leu Met Phe Asp Pro	
1	
gtt cct gtc aag caa	gag gcc atg gac cct
gtc tca gtg tca tac cca	223
Val Pro Val Lys Gln	Glu Ala Met Asp Pro
Val Ser Val Ser Tyr	Pro

7	12	17	22	
tct aat tac atg gaa tcc atg aag cct aac aag tat ggg gtc atc tac				271
Ser Asn Tyr Met Glu Ser Met Lys Pro Asn Lys Tyr Gly Val Ile Tyr				
23	28	33	38	
tcc aca cca ttg cct gag aag ttc ttt cag acc cca gaa ggt ctg tcg				319
Ser Thr Pro Leu Pro Glu Lys Phe Phe Gln Thr Pro Glu Gly Leu Ser				
39	44	49	54	
cac gga ata cag atg gag cca gtg gac ctc acg gtg aac aag cgg agt				367
His Gly Ile Gln Met Glu Pro Val Asp Leu Thr Val Asn Lys Arg Ser				
55	60	65	70	
tca ccc cct tcg gct ggg aat tcg ccc tcc tct ctg aag ttc ccg tcc				415
Ser Pro Pro Ser Ala Gly Asn Ser Pro Ser Ser Leu Lys Phe Pro Ser				
71	76	81	86	
tca cac cgg aga gcc tcg cct ggg ttg agc atg cct tct tcc agc cca				463
Ser His Arg Arg Ala Ser Pro Gly Leu Ser Met Pro Ser Ser Ser Pro				
87	92	97	102	
ccg ata aaa aaa tac tca ccc cct tct cca ggc gtg cag ccc ttc ggc				511
Pro Ile Lys Lys Tyr Ser Pro Pro Ser Pro Gly Val Gln Pro Phe Gly				
103	108	113	118	
gtg ccg ctg tcc atg cca cca gtg atg gca gct gcc ctc tcg cgg cat				559
Val Pro Leu Ser Met Pro Pro Val Met Ala Ala Ala Leu Ser Arg His				
119	124	129	134	
gga ata cgg agc ccg ggg atc ctg ccc gtc atc cag ccg gtg gtg gtg				607
Gly Ile Arg Ser Pro Gly Ile Leu Pro Val Ile Gln Pro Val Val Val				
135	140	145	150	
cag ccc gtc ccc ttt atg tac aca agt cac ctc cag cag cct ctc atg				655
Gln Pro Val Pro Phe Met Tyr Thr Ser His Leu Gln Gln Pro Leu Met				
151	156	161	166	
gtc tcc tta tcg gag gag atg gaa aat tcc agt agt agc atg caa gta				703
Val Ser Leu Ser Glu Glu Met Glu Asn Ser Ser Ser Ser Met Gln Val				
167	172	177	182	
cct gta att gaa tca tat gag aag cct ata tca cag aaa aaa att aaa				751
Pro Val Ile Glu Ser Tyr Glu Lys Pro Ile Ser Gln Lys Lys Ile Lys				
183	188	193	198	
ata gaa cct ggg atc gaa cca cag agg aca gat tat tat cct gaa gaa				799
Ile Glu Pro Gly Ile Glu Pro Gln Arg Thr Asp Tyr Tyr Pro Glu Glu				
199	204	209	214	
atg tca ccc ccc tta atg aac tca gtg tcc ccc ccg caa gca ttg ttg				847
Met Ser Pro Pro Leu Met Asn Ser Val Ser Pro Pro Gln Ala Leu Leu				
215	220	225	230	
caa gag taa gtatatt taggtctacc cagcatttgc atagtagtgt gcatcttgga				903
Gln Glu *				
231				

acctggagca gaagcacaag atttcacacg tgtgatgtgg tgtggatgac caggaacggc 963
 ttgtgatctg tggccgccac tgggccagta ccactgggtca agatgggaga atctctccaa 1023
 aaacaatatg ctgttacact gacaacgtta tgacaaaagt tacatcaagt tttcatggaa 1083
 tcagtcattcc atgattttgc accttaccac atgaattatt tttgggtttt ttccattctt 1143
 ccaggctatg tatacttact ttttccatta tgagaatcct tgtatagatt aaacttggtg 1203
 ttctgtggat catgtaaagt tttcatgtgg acacacatag tccttacaga gtgtatagta 1263
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 gaag 1327

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 <212> DNA
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 <222> (174)..(578)

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 ccaaatttgt ctgcttcttc tgttggggct tctgggtgtg gagggctcac tcc atg 176
 Met
 1
 tca aac ctc cac agt tta cct ggg ctc agg ggt ttg acg tcc atc agt 224
 Ser Asn Leu His Ser Leu Pro Gly Leu Arg Gly Leu Thr Ser Ile Ser
 2 7 12 17
 agg aac cag ctc caa tgc acc aat gca atg cgg gta att aac aat tat 272
 Arg Asn Gln Leu Gln Cys Thr Asn Ala Met Arg Val Ile Asn Asn Tyr
 18 23 28 33
 caa cgg cga tgg aaa aac caa aat act ttt ctt ctt gca act ttt gct 320
 Gln Arg Arg Trp Lys Asn Gln Asn Thr Phe Leu Leu Ala Thr Phe Ala
 34 39 44 49
 aat gta gtt aat gtt tgt ggt aac cca act ata acc tgc cct cat aac 368
 Asn Val Val Asn Val Cys Gly Asn Pro Thr Ile Thr Cys Pro His Asn
 50 55 60 65
 aga act ctc aac aat tgt cat cat agt gga gtc cag gtg cct tta atg 416
 Arg Thr Leu Asn Asn Cys His His Ser Gly Val Gln Val Pro Leu Met
 66 71 76 81

tac tgt aac ctc aca act cca agt cca cag aat att tca aac tgc agg	464
Tyr Cys Asn Leu Thr Pro Ser Pro Gln Asn Ile Ser Asn Cys Arg	
82 87 92 97	

tat gcg cag aca cca gca aac atg ttc tat ata gtt gca tgt gac aac	512
Tyr Ala Gln Thr Pro Ala Asn Met Phe Tyr Ile Val Ala Cys Asp Asn	
98 103 108 113	

agg gat caa cga cgg gac cct cca cag tat cca gtg gtt cca gtt cac	560
Arg Asp Gln Arg Arg Asp Pro Pro Gln Tyr Pro Val Val Pro Val His	
114 119 124 129	

ctg cat acc atc atc taa gctcct gtatcagcac tcctcatcat cactcatctg	614
Leu His Thr Ile Ile *	
130 135	

ccaagctcct caatcatagc caagatccca tccctccatg tactctgggt gtcagcatct	674
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gtcctcttca gtctctatac cccttcact tgctgagct gaagtgcctt gtgaagcctg	734
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caataaactg ctttgcaaatt tcac	759
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<210> 992
 <211> 1854
 <212> DNA
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<220>
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 <222> (559) .. (1710)

<220>
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 <222> (1) ... (1854)
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catggagaaa ccctgtctct actaaaaaca caaaattagc cgggcgtagt ggcacatgcc	180
tgtaatccca gctacttggg aggctgaggc aggagaattg cttgaacccg ggaggcagag	240
gttgctgtga gctgagattg cgccactgca ctccagcttg ggcaacgaga gcaaaactcc	300
atctctaaaa aaaaaacaaa tgacattcct taagggccag ggacctttat tgtttagtcc	360
caacatattt ggggatttgg gggcgatagc cctactttga attgaaaaca atttgagggt	420
taactgcttg caaactgtca tgggtctcag tctccaacct ctgtggactg taggggagtc	480

aggcaccatt tggcctcctc cccagctctg tgatgtgctg cttctctaga ctgcaggcac 540

cacctgtgtg aaccggac atg aaa ctg gtg tgg cct agt gcc aag ctg ttg 591

Met Lys Leu Val Trp Pro Ser Ala Lys Leu Leu

1 5

cag gca gct gca ggt gca tct gcc cgg gcc tgt gac tct gtc acc agc 639

Gln Ala Ala Ala Gly Ala Ser Ala Arg Ala Cys Asp Ser Val Thr Ser

12 17 22 27

aat gta ctg cct tta ctg ctg gaa cag ttc cac aag cac agt cag agc 687

Asn Val Leu Pro Leu Leu Leu Glu Gln Phe His Lys His Ser Gln Ser

28 33 38 43

agc cag cgg cgg aca atc ctt gaa atg ctc ctg ggt ttc ttg aag ctg 735

Ser Gln Arg Arg Thr Ile Leu Glu Met Leu Leu Gly Phe Leu Lys Leu

44 49 54 59

cag cag aaa tgg agc tat gaa gac aaa gat caa agg cct ctg aat ggc 783

Gln Gln Lys Trp Ser Tyr Glu Asp Lys Asp Gln Arg Pro Leu Asn Gly

60 65 70 75

ttc aag gac cag ctg tgc tca ctg gta ttc atg gct cta aca gac ccc 831

Phe Lys Asp Gln Leu Cys Ser Leu Val Phe Met Ala Leu Thr Asp Pro

76 81 86 91

agc acc cag ctt cag ctt gtt ggc atc cgt aca ctg aca gtc ttg ggt 879

Ser Thr Gln Leu Gln Leu Val Gly Ile Arg Thr Leu Thr Val Leu Gly

92 97 102 107

gcc cag cca gat ctc cta tct tat gag gac ttg gag ctg gca gtg ggt 927

Ala Gln Pro Asp Leu Leu Ser Tyr Glu Asp Leu Glu Leu Ala Val Gly

108 113 118 123

cac ctg tac aga ctg agc ttc ctg aag gag gat tcc cag agt tgc agg 975

His Leu Tyr Arg Leu Ser Phe Leu Lys Glu Asp Ser Gln Ser Cys Arg

124 129 134 139

gtg gca gca ctg gaa gca tca gga acc ctg gct gct ctc tac cct gtg 1023

Val Ala Ala Leu Glu Ala Ser Gly Thr Leu Ala Ala Leu Tyr Pro Val

140 145 150 155

gcc ttc agc agc cac ctc gta ccc aag ctc gct gag gag ctg cgt gta 1071

Ala Phe Ser Ser His Leu Val Pro Lys Leu Ala Glu Glu Leu Arg Val

156 161 166 171

ggg gag tca aat ttg act aac gga gat gag ccc acc caa tgc tcc cgg 1119

Gly Glu Ser Asn Leu Thr Asn Gly Asp Glu Pro Thr Gln Cys Ser Arg

172 177 182 187

cat ctg tgc tgt ctg caa gcc ttg tca gct gta tca aca cat ccc agc 1167

His Leu Cys Cys Leu Gln Ala Leu Ser Ala Val Ser Thr His Pro Ser

188 193 198 203

atc gtc aag gag aca ctg cct ctg ctg ctg cag cat ctc tgg caa gtg 1215

Ile Val Lys Glu Thr Leu Pro Leu Leu Leu Gln His Leu Trp Gln Val

204 209 214 219

aac aga ggg aat atg gtt gca caa tcc agt gac gtt att gct gtc tgt	1263
Asn Arg Gly Asn Met Val Ala Gln Ser Ser Asp Val Ile Ala Val Cys	
220 225 230 235	
cag agc ctc aga cag atg gca gaa aaa tgt cag cag gac cct gag agt	1311
Gln Ser Leu Arg Gln Met Ala Glu Lys Cys Gln Gln Asp Pro Glu Ser	
236 241 246 251	
tgc tgg tat ttc cac cag aca gct ata cct tgc ctg ctt gcc ttg gct	1359
Cys Trp Tyr Phe His Gln Thr Ala Ile Pro Cys Leu Leu Ala Leu Ala	
252 257 262 267	
gtg cag gcc tct atg cca gag aag gag ccc tca gtt ctg aga aaa gta	1407
Val Gln Ala Ser Met Pro Glu Lys Glu Pro Ser Val Leu Arg Lys Val	
268 273 278 283	
cta ttg gag gat gag gtg ttg gct gcc atg gtg tct gtc att ggc act	1455
Leu Leu Glu Asp Glu Val Leu Ala Ala Met Val Ser Val Ile Gly Thr	
284 289 294 299	
gct aca acc cac ctg agc cct gag tta gct gcc cag agt gtg aca cac	1503
Ala Thr Thr His Leu Ser Pro Glu Leu Ala Ala Gln Ser Val Thr His	
300 305 310 315	
att gtg ccc ctc ttc ttg gat ggc aac gtg tcc ttt ctg cct gaa aac	1551
Ile Val Pro Leu Phe Leu Asp Gly Asn Val Ser Phe Leu Pro Glu Asn	
316 321 326 331	
agc ttc ccg agc aga ttc cag cca ttc cag gat ggc tcc tca ggg cag	1599
Ser Phe Pro Ser Arg Phe Gln Pro Phe Gln Asp Gly Ser Ser Gly Gln	
332 337 342 347	
agg cgg ctg att gca ctg ctt atg gcc ttt gtc tgc tcc ctg cct cga	1647
Arg Arg Leu Ile Ala Leu Leu Met Ala Phe Val Cys Ser Leu Pro Arg	
348 353 358 363	
aat gta agt gag cac att tgg gaa gta ctg tta ttt aac ctt gac aag	1695
Asn Val Ser Glu His Ile Trp Glu Val Leu Leu Phe Asn Leu Asp Lys	
364 369 374 379	
gtg act ccg ggc tga aatttgccac aggctaagct gatcttttac ttccccacc	1750
Val Thr Pro Gly *	
380	
agagaagtta gttctcatcc gtcccggtcc ctgctgccac tatgtactgg ttctcttgga	1810
gttcaagtcg gacgcgtggg tcgacgtnaa ttccggagag ggac	1854

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 cggcactctt tcagcaacat ggtagcgga ggccaag atg ttt gat tca ctg gca 175
 Met Phe Asp Ser Leu Ala
 1
 aaa gcc gga aaa tat tta ggt cag gcg gcg aag ctg atg att ggt atg 223
 Lys Ala Gly Lys Tyr Leu Gly Gln Ala Ala Lys Leu Met Ile Gly Met
 7 12 17 22
 cct gat tac gac aac tat gtc gaa cat atg cgg gtt aac cat ccc gat 271
 Pro Asp Tyr Asp Asn Tyr Val Glu His Met Arg Val Asn His Pro Asp
 23 28 33 38
 caa acg ccg atg acc tac gaa gag ttt ttc cgt gag cgg cag gac gcg 319
 Gln Thr Pro Met Thr Tyr Glu Glu Phe Phe Arg Glu Arg Gln Asp Ala
 39 44 49 54
 cgc tac ggt gga aaa ggc ggc gcg cgc tgc tgc taa at 357
 Arg Tyr Gly Gly Lys Gly Gly Ala Arg Cys Cys *
 55 60 65

<210> 994
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 <212> DNA
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<220>
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 <222> (275) .. (424)

<400> 994
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 tccagcgggg aggtaaacga tacgtggtaa ttttggatgat tttcattgca ctgcctctcg 120
 atacgcctta acaaagtctg ctgcctgctg cgcggtgcgc tctacggatt gcccggcgcg 180
 atagagatcg ctgcctaagc cgcgccctgc acaacctgcg tctatccact gcgccaggtt 240
 ttctggcgtc acgccgcca cggcaaagac tgcg atg tcc gat ggc aat acc 292
 Met Ser Asp Gly Asn Thr
 1 /
 gct ttt aac gct ttg atg tat tgc gga cca aaa gcc gat gac gga aat 340
 Ala Phe Asn Ala Leu Met Tyr Cys Gly Pro Lys Ala Asp Asp Gly Asn

7	12	17	22	
att ttc agc gcc tgc gcg ccc gct tcg agc gcg gta aag gct tcg gtc				
Ile Phe Ser Ala Cys Ala Pro Ala Ser Ser Ala Val Lys Ala Ser Val	388			
23 28 33 38				

tcc gtc gcg cag ccg ggg cag gcg gtc atc ccg tag cccccgcgcc ggc	437
Ser Val Ala Gln Pro Gly Gln Ala Val Ile Pro *	
39 44 49	

<210> 995
 <211> 1714
 <212> DNA
 <213> Homo sapiens

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 <222> (147)..(1136)

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tggtttcttg cccccccct cgggcctttg ggctggacca gccacctctg cctgagacct	120
ccggtcgccg caagaagctg gagagg atg tac agc gtt gac cgt gtg tct gac	173
Met Tyr Ser Val Asp Arg Val Ser Asp	
1 5	
gac atc cct att cgt acc tgg ttc ccc aag gaa aat ctt ttc agc ttc	221
Asp Ile Pro Ile Arg Thr Trp Phe Pro Lys Glu Asn Leu Phe Ser Phe	
10 15 20 25	
cag aca gca acc aca act atg caa gcc atc tcg gtg ttc agg ggc tac	269
Gln Thr Ala Thr Thr Thr Met Gln Ala Ile Ser Val Phe Arg Gly Tyr	
26 31 36 41	
gcg gag agg aag cgc cgg aaa cgg gag aat gat tcc gcg tct gta atc	317
Ala Glu Arg Lys Arg Arg Lys Arg Glu Asn Asp Ser Ala Ser Val Ile	
42 47 52 57	
cag agg aac ttc cgc aaa cac ctg cgc atg gtc ggc agc cgg agg gtg	365
Gln Arg Asn Phe Arg Lys His Leu Arg Met Val Gly Ser Arg Arg Val	
58 63 68 73	
aag gcc cag acg ttc gct gag cgg cgc gag cgg agc ttc agc cgg tcc	413
Lys Ala Gln Thr Phe Ala Glu Arg Arg Glu Arg Ser Phe Ser Arg Ser	
74 79 84 89	
tgg agc gac ccc acc ccc atg aaa gcc gac act tcc cac gac tcc cga	461
Trp Ser Asp Pro Thr Pro Met Lys Ala Asp Thr Ser His Asp Ser Arg	
90 95 100 105	
gac agc agt gac ctg cag agc tcc cac tgc acg ctg gac gag gcc ttc	509

Asp Ser Ser Asp Leu Gln Ser Ser His Cys Thr Leu Asp Glu Ala Phe	
106 111 116 121	
gag gac ctg gac tgg gac act gag aag ggc ctg gag gct gtg gcc tgc	557
Glu Asp Leu Asp Trp Asp Thr Glu Lys Gly Leu Glu Ala Val Ala Cys	
122 127 132 137	
gac acc gaa ggc ttc gtg cca cca aag gtc atg ctc att tcc tcc aag	605
Asp Thr Glu Gly Phe Val Pro Pro Lys Val Met Leu Ile Ser Ser Lys	
138 143 148 153	
gtg ccc aag gct gag tac atc ccc act atc atc cgc cgg gat gac ccc	653
Val Pro Lys Ala Glu Tyr Ile Pro Thr Ile Ile Arg Arg Asp Asp Pro	
154 159 164 169	
tcc atc atc ccc atc ctc tac gac cat gag cac gca acc ttc gag gac	701
Ser Ile Ile Pro Ile Leu Tyr Asp His Glu His Ala Thr Phe Glu Asp	
170 175 180 185	
atc ctt gag gag ata gag agg aag ctg aac gtc tac cac aag gga gcc	749
Ile Leu Glu Glu Ile Glu Arg Lys Leu Asn Val Tyr His Lys Gly Ala	
186 191 196 201	
aag atc tgg aaa atg ctg att ttc tgc cag gga ggt cct gga cac ctc	797
Lys Ile Trp Lys Met Leu Ile Phe Cys Gln Gly Gly Pro Gly His Leu	
202 207 212 217	
tat ctc ctc aag aac aag gtg gcc acc ttt gcc aaa gtg gag aag gaa	845
Tyr Leu Leu Lys Asn Lys Val Ala Thr Phe Ala Lys Val Glu Lys Glu	
218 223 228 233	
gag gac atg att cac ttc tgg aag cgg ctg agc cgc ctg atg agc aaa	893
Glu Asp Met Ile His Phe Trp Lys Arg Leu Ser Arg Leu Met Ser Lys	
234 239 244 249	
gtg aac cca gag ccg aac gtc atc cac atc atg ggc tgc tac att ctg	941
Val Asn Pro Glu Pro Asn Val Ile His Ile Met Gly Cys Tyr Ile Leu	
250 255 260 265	
ggg aac ccc aat gga gag aag ctg ttc cag aac ctc agg acc ctc atg	989
Gly Asn Pro Asn Gly Glu Lys Leu Phe Gln Asn Leu Arg Thr Leu Met	
266 271 276 281	
act cct tat agg gtc acc ttc gag tca ccc ctg gag ctc tca gcc caa	1037
Thr Pro Tyr Arg Val Thr Phe Glu Ser Pro Leu Glu Leu Ser Ala Gln	
282 287 292 297	
ggg aag cag atg atc gag acg tac ttt gac ttc cgg ttg tat cgc ctg	1085
Gly Lys Gln Met Ile Glu Thr Tyr Phe Asp Phe Arg Leu Tyr Arg Leu	
298 303 308 313	
tgg aag agc cgc cag cac tcg aag ctg ctg gac ttt gac gac gtc ctg	1133
Trp Lys Ser Arg Gln His Ser Lys Leu Leu Asp Phe Asp Asp Val Leu	
314 319 324 329	
tga gggg cagaggcctc cgcccagtca ccatacaggcc actccctctg caccgggacc	1190
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330

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tggggctggg ccgcctcgtg ctccccggga ctgtgtggct ccggtctcgc ctggagccac 1250
ttcagggcac ctcagacggt gctcaggttc cccctgtggg ttccggtcct cgctgcaccc 1310
gtggccgcag aggctgcagt ccctgggggc cgggaggatc ccgccctgtg gcccgtggat 1370
gctcagcggc caggcactga cctgccatgc ctgcctgga ggctcagctg tgggcatccc 1430
tccatgggggt tcatagaaat aagtgaatt tctacacccc cgaaacaatt caaaggggaag 1490
cagcatttct tgttaactag ttaagcacta tgctgctagt tagagtgtag gcaccccggc 1550
ccagcagccc agcagccac atgtgttcag gcccccttg tgcagagcca ggggtctgag 1610
ggcacctggc tgtgttccca gctgagggag ggctggggcg ggggcccggc ttggaacgat 1670
gtacgatacc ctcatagtga ccattaaacc tgatcctccc ccgc 1714

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<210> 996
<211> 1793
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (142)..(1017)

<220>
<221> misc_feature
<222> (1)...(1793)
<223> n = a,t,c or g

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gtgccctctc ctactcctca ccgcgcgagc gcggggaacc agtagccgcg gctgcttcgg 120
ttgccgcggg cggtggctgt t atg gat tct cca tgg gac gag ttg gct ctg 171
                        Met Asp Ser Pro Trp Asp Glu Leu Ala Leu
                          1                      5

gcc ttc tcc cgc acg tcc atg ttt ccc ttt ttt gac atc gcg cac tat 219
Ala Phe Ser Arg Thr Ser Met Phe Pro Phe Phe Asp Ile Ala His Tyr
 11                      16                      21                      26

cta gtg tca gtg atg gcg gtg aaa cgt cag ccg gga gca gct gca ttg 267
Leu Val Ser Val Met Ala Val Lys Arg Gln Pro Gly Ala Ala Ala Leu
 27                      32                      37                      42

gca tgg aag aat cct att tca agc tgg ttt act gct atg ctc cac tgt 315
Ala Trp Lys Asn Pro Ile Ser Ser Trp Phe Thr Ala Met Leu His Cys
 43                      48                      53                      58

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ttt ggt gga gga att tta tcc tgt cta ctg ctt gca gag cct cca ttg	363
Phe Gly Gly Gly Ile Leu Ser Cys Leu Leu Leu Ala Glu Pro Pro Leu	
59 64 69 74	
aag ttt ctt gca aac cac act aac ata tta ctg gca tct tca atc tgg	411
Lys Phe Leu Ala Asn His Thr Asn Ile Leu Leu Ala Ser Ser Ile Trp	
75 80 85 90	
tat att aca ttt ttt tgc ccg cat gac cta gtt tcc cag ggc tat tca	459
Tyr Ile Thr Phe Phe Cys Pro His Asp Leu Val Ser Gln Gly Tyr Ser	
91 96 101 106	
tat cta cct gtt caa cta ctg gct tcg gga atg aag gaa gtg acc aga	507
Tyr Leu Pro Val Gln Leu Leu Ala Ser Gly Met Lys Glu Val Thr Arg	
107 112 117 122	
act tgg aaa ata gta ggt gga gtc aca cat gct aat agc tat tac aaa	555
Thr Trp Lys Ile Val Gly Gly Val Thr His Ala Asn Ser Tyr Tyr Lys	
123 128 133 138	
aat ggc tgg ata gtc atg ata gct att gga tgg gcc cga ggt gca ggt	603
Asn Gly Trp Ile Val Met Ile Ala Ile Gly Trp Ala Arg Gly Ala Gly	
139 144 149 154	
ggg acc att ata acg aat ttt gag agg ttg gta aaa gga gat tgg aaa	651
Gly Thr Ile Ile Thr Asn Phe Glu Arg Leu Val Lys Gly Asp Trp Lys	
155 160 165 170	
cca gaa ggt gat gaa tgg ctg aag atg tca tac cct gcc aag gta acc	699
Pro Glu Gly Asp Glu Trp Leu Lys Met Ser Tyr Pro Ala Lys Val Thr	
171 176 181 186	
ctg ctg ggg tca gtt atc ttc aca ttc cag cac acc cag cat ctg gca	747
Leu Leu Gly Ser Val Ile Phe Thr Phe Gln His Thr Gln His Leu Ala	
187 192 197 202	
ata tca aag cat aat ctt atg ttc ctt tat acc atc ttt att gtg gcc	795
Ile Ser Lys His Asn Leu Met Phe Leu Tyr Thr Ile Phe Ile Val Ala	
203 208 213 218	
aca aag ata acc atg atg act aca cag act tct act atg aca ttt gct	843
Thr Lys Ile Thr Met Met Thr Thr Gln Thr Ser Thr Met Thr Phe Ala	
219 224 229 234	
cct ttt gag gat aca ttg agt tgg atg cta ttt ggc tgg cag cag ccg	891
Pro Phe Glu Asp Thr Leu Ser Trp Met Leu Phe Gly Trp Gln Gln Pro	
235 240 245 250	
ttt tca tca tgt gag aag aaa agt gaa gca aag tca cct tcc aat ggc	939
Phe Ser Ser Cys Glu Lys Lys Ser Glu Ala Lys Ser Pro Ser Asn Gly	
251 256 261 266	
ggt ggg tca ttg gcc tca aag ccg gta gat gtt gcc tca gat aat gtt	987
Val Gly Ser Leu Ala Ser Lys Pro Val Asp Val Ala Ser Asp Asn Val	
267 272 277 282	

aaa aag aaa cat act aag aag aat gaa taa a ttacgtgat gagctctaca 1038
 Lys Lys Lys His Thr Lys Lys Asn Glu *
 283 288

aggccaaaaa ttttttttct tatctacctg ttatattgtg ctaatttttc tatgtatgtg 1098
 atgtgaaatg aagactatat atatggaatg gaggtgacag aaagaaagaa attccttctgtt 1158
 tgaggagagac ttcccccttc tggattgtat ttgtagagtg ttacgagtgt atcatgtgat 1218
 tatgctttac cggtataaga gattctgttg tgattatttg aatagtttta tattaataaa 1278
 agaagacaaa attttttaaa tgtagaaaa agcagatctg tcattgcaaa gtaacaaaaa 1338
 ttttaagctt ttaaaaatgt agatttttca tatttttaaa atttgaatct atttgagctt 1398
 tagttcagca gaattaaatt ttacttgac attatcatta aaattgctag gtatggagaa 1458
 caattcctat tttattttga aactgagaa gagtaactt ttcctaaaac actttatatt 1518
 ataaatgaaa ataaattgct agtttatatt ttagatataa acatcatatt ttttattaat 1578
 acctacatca aatggaaaat atctgaaatt tttttccat agcaggtatt tntactaga 1638
 ngtagttttn ctacttttnc tttagaacag agtatgagtc ttaatctgaa gtctttttca 1698
 tgcccttggt ttaaaaaaac tacttttttc ggcctcaaaa aaaatcaagg gtggaattt 1758
 ttnaataaat tgtttaatcc cattgggtgtt gnaaa 1793

<210> 997
 <211> 1679
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (521) .. (1330)

<220>
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 <222> (1) ... (1679)
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 gccagttcct tggatatatc cacgggcttt gctttgagaa ggaactgagt aggcagtgag 180
 aagagtcgag tgaagcctgg cccgtgagt cctcaacaac tgagatgaac gtcgactcgc 240
 ttgcaggcaa gttgtcactc agcagcgatc tgaactatat cctgggttcc agaaaaggca 300

gaggttctta ccgaaagcag gggaggaagc cgcagcccaa ggaggtcgtc acttgccggg 360
aaggtggctc gggccaggct gcactcaaaa cccgtgctct gtccacactg ctacggggcc 420
agagccaagg aagcttccac ttcttcccc agacagcccc aacagcggct accccaagga 480
gccagcagcc ttgtgtcctg ggatccccag cccctgcaga atg acc cac cag gat 535
Met Thr His Gln Asp
1
ctg agc atc aca gcc aaa ctc atc aat gga ggt gta gca ggg ctc gtg 583
Leu Ser Ile Thr Ala Lys Leu Ile Asn Gly Gly Val Ala Gly Leu Val
6 11 16 21
ggg gtg acc tgc gtg ttc ccc atc gac ttg gcc aag act cgc ctg cag 631
Gly Val Thr Cys Val Phe Pro Ile Asp Leu Ala Lys Thr Arg Leu Gln
22 27 32 37
aac cag cat ggg aaa gcc atg tac aaa gga atg atc gac tgc ctg atg 679
Asn Gln His Gly Lys Ala Met Tyr Lys Gly Met Ile Asp Cys Leu Met
38 43 48 53
aag acg gct cgg gcg gag ggc ttc ttc ggc atg tac cga ggg gct gca 727
Lys Thr Ala Arg Ala Glu Gly Phe Phe Gly Met Tyr Arg Gly Ala Ala
54 59 64 69
gtg aac ctc act ctg gtc act cca gag aag gcc atc aag ctg gcg gcc 775
Val Asn Leu Thr Leu Val Thr Pro Glu Lys Ala Ile Lys Leu Ala Ala
70 75 80 85
aac gac ttt ttc cgg cgg ctg ctc atg gaa gat ggg atg cag cgg aac 823
Asn Asp Phe Phe Arg Arg Leu Leu Met Glu Asp Gly Met Gln Arg Asn
86 91 96 101
ctg aag atg gag atg ctt gcc ggg tgt ggg gct ggg atg tgc cag gtc 871
Leu Lys Met Glu Met Leu Ala Gly Cys Gly Ala Gly Met Cys Gln Val
102 107 112 117
gtg gtg acc tgt ccc atg gaa atg ctc aag att cag ctg cag gat gct 919
Val Val Thr Cys Pro Met Glu Met Leu Lys Ile Gln Leu Gln Asp Ala
118 123 128 133
gga cgc ctg gcc gtc cat cat cag ggc tcg gcc tca gca ccc tcc acc 967
Gly Arg Leu Ala Val His His Gln Gly Ser Ala Ser Ala Pro Ser Thr
134 139 144 149
tcc agg tcc tac aca act ggt tcg gct tcc acc cac agg cgc ccc tct 1015
Ser Arg Ser Tyr Thr Thr Gly Ser Ala Ser Thr His Arg Arg Pro Ser
150 155 160 165
gcc acc ctc att gcc tgg gag ctg ctc cgc act cag ggc ctg gct ggg 1063
Ala Thr Leu Ile Ala Trp Glu Leu Leu Arg Thr Gln Gly Leu Ala Gly
166 171 176 181
ctc tac agg ggc ctg ggt gcc act ctc ctc aga gac att cct ttc tcc 1111
Leu Tyr Arg Gly Leu Gly Ala Thr Leu Leu Arg Asp Ile Pro Phe Ser

182	187	192	197	
atc atc tac ttc cca ctg ttt gcc aac ctt aac aac ctg ggg ttc aac				1159
Ile Ile Tyr Phe Pro Leu Phe Ala Asn Leu Asn Asn Leu Gly Phe Asn				
198	203	208	213	
gag ctc gcc ggt aag gcg tcc ttt gca cat tcc ttc gtg tca ggc tgt				1207
Glu Leu Ala Gly Lys Ala Ser Phe Ala His Ser Phe Val Ser Gly Cys				
214	219	224	229	
gtg gca ggt tcc ata gct gcg gtc gca gtg acg cct cta gat gtt ctg				1255
Val Ala Gly Ser Ile Ala Ala Val Ala Val Thr Pro Leu Asp Val Leu				
230	235	240	245	
aaa act cga atc caa acc ctc aag aaa ggc ctg ggc gag gac atg tac				1303
Lys Thr Arg Ile Gln Thr Leu Lys Lys Gly Leu Gly Glu Asp Met Tyr				
246	251	256	261	
agt ggg atc acc gac tgt gcc agg tga gagcc agtgtcccct caaatggtgg				1355
Ser Gly Ile Thr Asp Cys Ala Arg *				
262	267			
ctgggacagg ttccctctgcg tgggtgtctg cctagaccag atttagagac caacttgaat				1415
tgctgggctc tgggtttctt tgaagtctgt ctttccctca cctctcaaag aaaacagaat				1475
gtactgggag cctttttctt ctccctggca tcctacagc atctctcacc aaagattcta				1535
gccacatcaa gcctgtttcc aaggccttga cccanctgca taagtaacca acatgcatgc				1595
acctagcggg cgaggcacag ccggacgcgt gggctgaccc ggggaattccg gcccgggacc				1655
tcaagcgtac ggcttcaaac tctg				1679

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 <212> DNA
 <213> Homo sapiens

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 <222> (76)..(2904)

<220>
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 <223> n = a,t,c or g

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Met Lys Arg Arg Ala Gly Leu Gly Gly Ser Met Arg	
1 5 10	

tca gtg gtg ggc ttc ttg tcc cag cgg ggc ttg cat ggg gac ccc ctg	159
Ser Val Val Gly Phe Leu Ser Gln Arg Gly Leu His Gly Asp Pro Leu	
13 18 23 28	
ctc act cag gac ttt cag agg aga cgc ctg cgg ggc tgc aga aac ctc	207
Leu Thr Gln Asp Phe Gln Arg Arg Arg Leu Arg Gly Cys Arg Asn Leu	
29 34 39 44	
tac aag aag gac ctc ctc ggc cac ttc ggc tgt gtc aat gcc att gaa	255
Tyr Lys Lys Asp Leu Leu Gly His Phe Gly Cys Val Asn Ala Ile Glu	
45 50 55 60	
ttc tcc aac aat gga ggc cag tgg ctg gtc tca gga gga gat gac cgc	303
Phe Ser Asn Asn Gly Gly Gln Trp Leu Val Ser Gly Gly Asp Asp Arg	
61 66 71 76	
cgg gtt ctg cta tgg cac atg gaa caa gcc atc cac tcc agg gtc aag	351
Arg Val Leu Leu Trp His Met Glu Gln Ala Ile His Ser Arg Val Lys	
77 82 87 92	
ccc ata cag ctg aaa gga gag cac cat tcc aac att ttt tgc ctg gct	399
Pro Ile Gln Leu Lys Gly Glu His His Ser Asn Ile Phe Cys Leu Ala	
93 98 103 108	
ttc aac agt ggg aac act aaa gtg ttc tct gga ggc aat gat gag caa	447
Phe Asn Ser Gly Asn Thr Lys Val Phe Ser Gly Gly Asn Asp Glu Gln	
109 114 119 124	
gtt atc ctc cat gat gtt gaa agc agt gag aca ttg gac gtg ttt gct	495
Val Ile Leu His Asp Val Glu Ser Ser Glu Thr Leu Asp Val Phe Ala	
125 130 135 140	
cat gaa gat gca gta tat ggc ttg tct gtg agc cca gtg aat gac aac	543
His Glu Asp Ala Val Tyr Gly Leu Ser Val Ser Pro Val Asn Asp Asn	
141 146 151 156	
att ttt gcc agt tcc tca gat gat ggc cgg gtt ctc att tgg gac att	591
Ile Phe Ala Ser Ser Ser Asp Asp Gly Arg Val Leu Ile Trp Asp Ile	
157 162 167 172	
cgg gaa tcc ccc cat gga gag ccc ttc tgc ctg gca aac tat cca tca	639
Arg Glu Ser Pro His Gly Glu Pro Phe Cys Leu Ala Asn Tyr Pro Ser	
173 178 183 188	
gcc ttt cat agt gtc atg ttt aac cct gtg gag ccc agg ttg ttg gcc	687
Ala Phe His Ser Val Met Phe Asn Pro Val Glu Pro Arg Leu Leu Ala	
189 194 199 204	
aca gcc aat tca aag gaa gga gtg gga ctc tgg gac att cga aaa cct	735
Thr Ala Asn Ser Lys Glu Gly Val Gly Leu Trp Asp Ile Arg Lys Pro	
205 210 215 220	
cag agt tct ctc ctg cgc tat ggt gga aac ctg tcc ctc caa agt gcc	783
Gln Ser Ser Leu Leu Arg Tyr Gly Gly Asn Leu Ser Leu Gln Ser Ala	
221 226 231 236	

atg agt gta cga ttc aac agc aac ggg acc cag ctc ctg gcc ctg agg	831
Met Ser Val Arg Phe Asn Ser Asn Gly Thr Gln Leu Leu Ala Leu Arg	
237 242 247 252	
cga cgc ctg ccc cct gtg ctc tat gac atc cat tcc cgc ctg cct gtg	879
Arg Arg Leu Pro Pro Val Leu Tyr Asp Ile His Ser Arg Leu Pro Val	
253 258 263 268	
ttt cag ttt gac aat cag ggt tac ttc aac tca tgc acc atg aaa agc	927
Phe Gln Phe Asp Asn Gln Gly Tyr Phe Asn Ser Cys Thr Met Lys Ser	
269 274 279 284	
tgc tgt ttt gca gga gat cgt gac cag tat atc ctt tcg ggc tct gat	975
Cys Cys Phe Ala Gly Asp Arg Asp Gln Tyr Ile Leu Ser Gly Ser Asp	
285 290 295 300	
gac ttc aac ctg tac atg tgg aga att cct gca gat cca gaa gca ggt	1023
Asp Phe Asn Leu Tyr Met Trp Arg Ile Pro Ala Asp Pro Glu Ala Gly	
301 306 311 316	
ggc att ggt agg gtg gtc aac gga gcc ttc atg gtg ctg aaa ggg cat	1071
Gly Ile Gly Arg Val Val Asn Gly Ala Phe Met Val Leu Lys Gly His	
317 322 327 332	
cga tct att gtt aac caa gtc cga ttt aat ccc cac acc tac atg atc	1119
Arg Ser Ile Val Asn Gln Val Arg Phe Asn Pro His Thr Tyr Met Ile	
333 338 343 348	
tgc tct tct ggt gta gaa aag att atc aag atc tgg agc cca tac aag	1167
Cys Ser Ser Gly Val Glu Lys Ile Ile Lys Ile Trp Ser Pro Tyr Lys	
349 354 359 364	
cag cca gga tgt act gga gac ctc gac ggt cgg att gag gac gat tcc	1215
Gln Pro Gly Cys Thr Gly Asp Leu Asp Gly Arg Ile Glu Asp Asp Ser	
365 370 375 380	
cgc tgc ctc tat acc cat gaa gag tac atc agc ctt gtg ctg aac agt	1263
Arg Cys Leu Tyr Thr His Glu Glu Tyr Ile Ser Leu Val Leu Asn Ser	
381 386 391 396	
ggg agt ggc ctg tcg cat gac tac gcc aac cag tcg gtc cag gaa gac	1311
Gly Ser Gly Leu Ser His Asp Tyr Ala Asn Gln Ser Val Gln Glu Asp	
397 402 407 412	
ccc cgg atg atg gcc ttc ttt gac tca ctg gta cgc cga gag atc gag	1359
Pro Arg Met Met Ala Phe Phe Asp Ser Leu Val Arg Arg Glu Ile Glu	
413 418 423 428	
ggc tgg agc tct gac tca gac agt gac ctc agt gag agt act atc ctc	1407
Gly Trp Ser Ser Asp Ser Asp Ser Asp Leu Ser Glu Ser Thr Ile Leu	
429 434 439 444	
caa ctg cac gct ggg gtc agc gag cgc tca ggc tac act gac tca gag	1455
Gln Leu His Ala Gly Val Ser Glu Arg Ser Gly Tyr Thr Asp Ser Glu	
445 450 455 460	
tct tcg gcc tca ttg cct cgc tcc ccg cct ccc aca gta gat gag tct	1503

Ser	Ser	Ala	Ser	Leu	Pro	Arg	Ser	Pro	Pro	Pro	Thr	Val	Asp	Glu	Ser		
461					466					471					476		
gcc	gac	aac	gcc	ttc	cac	ctg	ggg	ccc	ctg	cgg	gtc	acc	acc	aca	aac	1551	
Ala	Asp	Asn	Ala	Phe	His	Leu	Gly	Pro	Leu	Arg	Val	Thr	Thr	Thr	Asn		
477					482					487					492		
aca	gta	gcc	tca	act	cca	cca	aca	ccc	acg	tgt	gag	gat	gca	gcc	tct	1599	
Thr	Val	Ala	Ser	Thr	Pro	Pro	Thr	Pro	Thr	Cys	Glu	Asp	Ala	Ala	Ser		
493					498					503					508		
cgc	cag	cag	cgt	ctg	tct	gct	ctg	cgg	cgc	tac	caa	gac	aaa	cgc	ctc	1647	
Arg	Gln	Gln	Arg	Leu	Ser	Ala	Leu	Arg	Arg	Tyr	Gln	Asp	Lys	Arg	Leu		
509					514					519					524		
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Ala Gln Arg Asn Gln Asp Leu Pro Pro Glu Gly Cys Ser Lys Asp Thr				
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Phe Lys Glu Glu Thr Pro Arg Thr Pro Ser Asn Gly Pro Gly His Glu				
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Val Glu Arg Leu Ala Ala Met Arg Ser Asp Ser Leu Val Pro Gly Thr	
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Cys Cys Gln Glu Asp Leu Cys Asn Glu Lys Leu His Asn Ala Ala Pro	
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Ser Leu Leu Ala Val Ile Leu Ala Pro Ser Leu *	
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5

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154 159 164 169	
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Ser Glu Cys Phe Tyr Val Pro Leu Pro Arg His Leu Ser Glu Arg Ser	
170 175 180 185	
gag cag aat cgg aga tca gag gag gct cat aga gct gaa cag ttg cag	686
Glu Gln Asn Arg Arg Ser Glu Glu Ala His Arg Ala Glu Gln Leu Gln	
186 191 196 201	
gat gcg gag gag gaa aaa gat gat tca aat gaa gaa gaa aac aaa gac	734
Asp Ala Glu Glu Glu Lys Asp Asp Ser Asn Glu Glu Glu Asn Lys Asp	

202	207	212	217	
agc ctt gta gat gat	gaa gaa gag aaa gaa	gat ctt ggc gat gag	gat	782
Ser Leu Val Asp Asp	Glu Glu Glu Lys Glu	Asp Leu Gly Asp Glu	Asp	
218	223	228	233	
gaa gca gag gaa gaa	gag gag gag gac aac	ttg gct gct ggt gtg	gat	830
Glu Ala Glu Glu Glu	Glu Glu Glu Asp Asn	Leu Ala Ala Gly Val	Asp	
234	239	244	249	
gag gag aga agt gag	gcc aat gat cag ggg	ccc cca gga gag gac	ggt	878
Glu Glu Arg Ser Glu	Ala Asn Asp Gln Gly	Pro Pro Gly Glu Asp	Gly	
250	255	260	265	
gtg acc cgg gag gaa	gta gag cct gag gag	gct gaa gaa ggc atc	tct	926
Val Thr Arg Glu Glu	Val Glu Pro Glu Glu	Ala Glu Glu Gly Ile	Ser	
266	271	276	281	
gag caa ccc tgc cca	gct gac aca gag gtg	gtg gaa gac tcc ttg	agg	974
Glu Gln Pro Cys Pro	Ala Asp Thr Glu Val	Val Glu Asp Ser Leu	Arg	
282	287	292	297	
cag cgt aaa agt cag	cat gct gac aag gga	ctg tag attt aatgat	gcgt	1024
Gln Arg Lys Ser Gln	His Ala Asp Lys Gly	Leu *		
298	303	308		
tttcaagaat acacaccaa	acaatatgtc agcttccctt	tggcctgcag tttgtacaa		1084
atccttaatt tttcctgaat	gagcaagctt ctcttaaaag	atgctctcta gtcatttggt		1144
ctcatggcag taagcctcat	gtatactaag gagagtcttc	caggtgtgac aatcaggata		1204
tagaaaaaca aacgtagtgt	tgggatctgt ttggagactg	ggatgggaac aagttcattt		1264
acttaggggt cagagagtct	cgaccagagg aggccattcc	cagtcctaata cagcaccttc		1324
cagagacaag gctgcaggcc	ctgtgaaatg aaagccaagc	aggagccttg gctcctgagc		1384
atccccaaag tgtaacgtag	aagccttgca tccttttctt	gtgtaaagta tttatttttg		1444
tcaaattgca ggaaacatca	ggcaccacag tgcataaaaa	atctttcaca gctagaaatt		1504
gaaagggcct tgggtataga	gagcagctca gaagtcattc	cagccctctg aatctcctgt		1564
gctatgtttt atttcttacc	tttaattttt ccagcatttc	caccatgggc attcaggctc		1624
tccacactct tcactattat	ctcttggtca gaggactcca	ataacagcca ggtttacatg		1684
aactgtgttt gttcattctg	acctaagggg tttagataat	cagtaaccat aaccctgaa		1744
gctgtgactg ccaaacatct	caaatgaaat gttgtggcca	tcagagactc aaaaggaagt		1804
aaggatttta caagacagat	taaaaaaaaaa ttgttttgct	caaaatatag ttgttggtga		1864
ttttttttta agttttctaa	gcaatatttt tcaagccaga	agtcctctaa gtcttgccag		1924
tacaaggtag tcttgtgaag	aaaagttgaa tactgttttg	ttttcatctc aaggggttcc		1984

ctgggtcttg aactacttta ataataacta aaaaaccact tctgattttc cttcagtgat 2044
 gtgcttttgg tgaaagaatt aatgaactcc agtacctgaa agtgaaagat ttgattttgt 2104
 ttccatcttc tgtaatcttc caaagaatta tatctttgta aatctctcaa tactcaatct 2164
 actgtaagta cccagggagg ctaatttcct taaaaaaaaa aaatctatcc atctacttct 2224
 ctcttacctg atttatgtgt tagaataaat tcatgaaatt cgattccaag cata 2278

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 <213> Homo sapiens

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 <222> (253)..(1671)

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 actacagtgc ccgcccagtt tgccgacagt gaaaaaaaaa aagtaccgtt ccaaagcagg 180
 agcctaggca gccgagaggg tgcccgaacc tgagtctgag ttgcggccac ttcaggagct 240
 gagaggagca gg atg gaa ctg cag gat cca aag atg aat gga gcc ctc 288
 Met Glu Leu Gln Asp Pro Lys Met Asn Gly Ala Leu
 1 5 10
 cct tcg gat gct gtg ggc tac agg caa gaa cgt gag ggc ttc ctg ccc 336
 Pro Ser Asp Ala Val Gly Tyr Arg Gln Glu Arg Glu Gly Phe Leu Pro
 13 18 23 28
 agt cgt ggt cct gct cct ggg agc aag ccg gtc cag ttc atg gat ttc 384
 Ser Arg Gly Pro Ala Pro Gly Ser Lys Pro Val Gln Phe Met Asp Phe
 29 34 39 44
 gag ggg aag aca tcg ttt gga atg tca gtg ttc aac ctc agc aac gcc 432
 Glu Gly Lys Thr Ser Phe Gly Met Ser Val Phe Asn Leu Ser Asn Ala
 45 50 55 60
 atc atg ggc agc ggc atc ctg ggg ctg gcc tat gcc atg gcc cac acg 480
 Ile Met Gly Ser Gly Ile Leu Gly Leu Ala Tyr Ala Met Ala His Thr
 61 66 71 76
 ggg gtc atc ttc ttc ctg gcc ctg ctg ctg tgc att gcg ctt ctg tcg 528
 Gly Val Ile Phe Phe Leu Ala Leu Leu Leu Cys Ile Ala Leu Leu Ser
 77 82 87 92
 tcc tac tcc atc cac ctc ctg ctg acc tgt gct ggt att gca ggc atc 576

Ser	Tyr	Ser	Ile	His	Leu	Leu	Leu	Thr	Cys	Ala	Gly	Ile	Ala	Gly	Ile		
93					98					103					108		
cga	gcc	tat	gag	cag	ctg	gga	cag	agg	gca	ttc	ggg	cct	gcg	ggg	aag		624
Arg	Ala	Tyr	Glu	Gln	Leu	Gly	Gln	Arg	Ala	Phe	Gly	Pro	Ala	Gly	Lys		
109					114					119					124		
gta	gtg	gtg	gcc	aca	gtc	atc	tgt	ctg	cac	aat	gtt	ggg	gcc	atg	tcc		672
Val	Val	Val	Ala	Thr	Val	Ile	Cys	Leu	His	Asn	Val	Gly	Ala	Met	Ser		
125					130					135					140		
agt	tac	ctg	ttc	atc	atc	aaa	tct	gag	ctc	ccc	ctg	gtt	atc	ggc	acc		720
Ser	Tyr	Leu	Phe	Ile	Ile	Lys	Ser	Glu	Leu	Pro	Leu	Val	Ile	Gly	Thr		
141					146					151					156		
ttc	ctg	tac	atg	gac	ccc	gag	ggg	gac	tgg	ttc	ttg	aag	gga	aac	ctc		768
Phe	Leu	Tyr	Met	Asp	Pro	Glu	Gly	Asp	Trp	Phe	Leu	Lys	Gly	Asn	Leu		
157					162					167					172		
ctc	atc	atc	atc	gtc	agt	gtg	tta	atc	atc	ctg	ccc	ctc	gcc	ctc	atg		816
Leu	Ile	Ile	Ile	Val	Ser	Val	Leu	Ile	Ile	Leu	Pro	Leu	Ala	Leu	Met		
173					178					183					188		
aaa	cac	ttg	ggc	tac	ctg	ggg	tac	acc	agt	ggt	ctc	tct	ctg	acc	tgc		864
Lys	His	Leu	Gly	Tyr	Leu	Gly	Tyr	Thr	Ser	Gly	Leu	Ser	Leu	Thr	Cys		
189					194					199					204		
atg	ctg	ttt	ttc	ctt	gtt	tgc	gtc	atc	tac	aag	aag	ttc	caa	ctt	ggc		912
Met	Leu	Phe	Phe	Leu	Val	Ser	Val	Ile	Tyr	Lys	Lys	Phe	Gln	Leu	Gly		
205					210					215					220		
tgt	gct	ata	ggc	cac	aat	gaa	aca	gca	atg	gag	agt	gaa	gct	ctc	gtg		960
Cys	Ala	Ile	Gly	His	Asn	Glu	Thr	Ala	Met	Glu	Ser	Glu	Ala	Leu	Val		
221					226					231					236		
gga	ctc	ccc	agc	caa	gga	ctc	aac	agc	agc	tgt	gag	gcc	cag	atg	ttc		1008
Gly	Leu	Pro	Ser	Gln	Gly	Leu	Asn	Ser	Ser	Cys	Glu	Ala	Gln	Met	Phe		
237					242					247					252		
aca	gtt	gac	tca	cag	atg	tcc	tac	aca	gtg	ccc	att	atg	gct	ttt	gct		1056
Thr	Val	Asp	Ser	Gln	Met	Ser	Tyr	Thr	Val	Pro	Ile	Met	Ala	Phe	Ala		
253					258					263					268		
ttt	gtc	tgc	cac	cct	gag	gtg	ctg	ccc	atc	tat	acg	gag	ctc	tgc	cgg		1104
Phe	Val	Cys	His	Pro	Glu	Val	Leu	Pro	Ile	Tyr	Thr	Glu	Leu	Cys	Arg		
269					274					279					284		
ccc	tcc	aag	cgc	agg	atg	cag	gcc	gtg	gcc	aac	gtg	tcc	att	ggg	gcc		1152
Pro	Ser	Lys	Arg	Arg	Met	Gln	Ala	Val	Ala	Asn	Val	Ser	Ile	Gly	Ala		
285					290					295					300		
atg	ttc	tgc	atg	tat	ggg	ctc	aca	gca	acc	ttt	gga	tac	ctc	acc	ttc		1200
Met	Phe	Cys	Met	Tyr	Gly	Leu	Thr	Ala	Thr	Phe	Gly	Tyr	Leu	Thr	Phe		
301					306					311					316		
tac	agc	agt	gtg	aag	gcg	gag	atg	ctg	cac	atg	tac	agc	cag	aag	gac		1248
Tyr	Ser	Ser	Val	Lys	Ala	Glu	Met	Leu	His	Met	Tyr	Ser	Gln	Lys	Asp		

317	322	327	332	
ccg ctc atc ctc tgt	gtg cgc ctg gcc gtg	ctg ctc gcg gtg acc ctc		1296
Pro Leu Ile Leu Cys	Val Arg Leu Ala Val	Leu Leu Ala Val Thr	Leu	
333	338	343	348	
act gtg cca gtc gtg	ctg ttc cct atc cgc	cgg gcc ctg cag cag ctg		1344
Thr Val Pro Val Val	Leu Phe Pro Ile Arg	Arg Ala Leu Gln Gln Leu		
349	354	359	364	
ctt ttc cca ggc aag	gcc ttc agc tgg cca	cga cat gtg gcc ata gct		1392
Leu Phe Pro Gly Lys	Ala Phe Ser Trp Pro	Arg His Val Ala Ile Ala		
365	370	375	380	
ctg atc ctg ctt gtt	ttg gtc aat gtc ctt	gtc atc tgt gtg cca acc		1440
Leu Ile Leu Leu Val	Leu Val Asn Val Leu	Val Ile Cys Val Pro Thr		
381	386	391	396	
atc cgg gat atc ttt	gga gtt atc ggg tcc	acc tca gcc ccc agc ctc		1488
Ile Arg Asp Ile Phe	Gly Val Ile Gly Ser	Thr Ser Ala Pro Ser Leu		
397	402	407	412	
atc ttc atc ctc ccc	agc atc ttc tac ctc	cgc att gta ccc tct gag		1536
Ile Phe Ile Leu Pro	Ser Ile Phe Tyr Leu	Arg Ile Val Pro Ser Glu		
413	418	423	428	
gtg gag cct ttc tta	tcc tgg ccc aag atc	cag gcc ctg tgc ttt gga		1584
Val Glu Pro Phe Leu	Ser Trp Pro Lys Ile	Gln Ala Leu Cys Phe Gly		
429	434	439	444	
gtc ctg gga gtc ctc	ttc atg gcc gtc agt	cta ggc ttt atg ttt gcc		1632
Val Leu Gly Val Leu	Phe Met Ala Val Ser	Leu Gly Phe Met Phe Ala		
445	450	455	460	
aac tgg gcc aca ggc	cag agc cgc atg tct	gga cac tga tcaggccctg		1681
Asn Trp Ala Thr Gly	Gln Ser Arg Met Ser	Gly His *		
461	466	471		
ctggcccagg tccctgtg	cg catgcacatg gaggggtc	ag gcccgctccc tagggctcc		1741
cctgcccac atgtggag	gt ggctgggtcc catgaac	gtg gttgtcagag gcgggggaca		1801
gcagaggctg cagactgg	gcc cacttccctc ctcccc	caggg atgccaagct tggatcat		1861
ccctaattccc aacccca	acc ccatgggagg aggagg	agga ggaagaaaag gaggagg		1921
ag				1923

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 <211> 1410
 <212> DNA
 <213> Homo sapiens

<220>

<221> CDS

<222> (608) .. (769)

<400> 1005

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gggaagctgg aatctgttat ggtgtattac ggggaggagc ctttctgtta tttcccccca      120
gcttccatca cccttccctt aatgccagga gcgccgaggt ttggaactga ggctaaaccg      180
aaggctttct cctgcttctg tcaccctgtg ctgtctcccg gcatctcctc actatctggg      240
tccaggcccc ggtcctccct gcagactccc tcccctccag cccacaagga ctccagcctg      300
ctggctgggt agagctggat gagcagtaag aagttaacgc caggtcagcc tcgggccccca      360
gggttccctg ggcacaggct gacactagga gctgctctcc ttggccgggg acagctccag      420
cagctcaggc tccagccctc cagtgaagcc cctctcctgg agagtagcaa agaattggaga      480
aaggcctggc ttgagaggaa atggagaaaa cattgcctgg tagctgcaga ttcaaaccga      540
ccacacacac cacgggggcta gactgactca cctgggctca caccaacttc tggccaatgc      600
agggacc  atg ctc tgc aga cag cag tcc tct agc atg gcc cca gca ttc      649
          Met Leu Cys Arg Gln Gln Ser Ser Ser Met Ala Pro Ala Phe
          1             5             10

agc cag tcg gtc acc tgt ggg cca tcc cca tgt gtg agg aag cag gag      697
Ser Gln Ser Val Thr Cys Gly Pro Ser Pro Cys Val Arg Lys Gln Glu
  15             20             25             30

tca gcc acc aag tgt ctc cac atc gga gct tgc ggg tca gac ctg tgg      745
Ser Ala Thr Lys Cys Leu His Ile Gly Ala Cys Gly Ser Asp Leu Trp
  31             36             41             46

gcc agg gga tgg gag cag ggc tga gggtaggggc tgaatgtgtg gctctgtccc      799
Ala Arg Gly Trp Glu Gln Gly  *
  47             52

tgtgttgcc tccacagagg agcaaggcct caggctgagg aaggaggggc acgctggaac      859
agcctagtct cctccccgtg gattccccca aaccataac attcttccat aggggctgag      919
aacgcagtgc cccgtccctg acagggatga aaagtgaacc cctcagggtca ggagaggcag      979
agttgagggt ctgccacttc ctgtccctgg ggagccactc aagttaccag ggctaccggc     1039
tgaaataaat cttttccggg taggggtcaag ggcagtgtgt tccaaggcaa ctgatgtagg     1099
ccagttgcgt gactccaggt ttgtcctggg actcagtggg tccaatcacc tggcattgat     1159
cacctggcat tgatcagcac ccacccacc cctgaggctt gccagcccc caggccctca     1219
gatccctgct ctctcctgct ttctgcccc tgtgtcaccc agcacccaag gttcagtgac     1279
acagggtggt ttggagctgg tcaactgtcat agcagctgtg atttcacaag gaagggtgct     1339
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gcagggggac ctggttgatg gggagtggga aggggaagga ataaagagat cttcctcagg 1399
 taaaaaaaaa a 1410

<210> 1006
 <211> 2142
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (528)..(1604)

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 cttgtttcca tgacggcacg tgcgtccttg acaaggctgg atcttacaag tgtgcctgct 180
 tggcaggcta tactgggcag cgctgtgaaa atcttctgga ggctgggaag tccaagatca 240
 aggcgtcaga agattcattg tctgtccttg aagaaagaaa ctgctcagac cctggggggcc 300
 cagtcaatgg gtaccagaaa ataacagggg gccctgggct tatcaacgga cgccatgcta 360
 aaattggcac cgtggtgtct ttcttttgta acaactccta tggtcttagt ggcaatgaga 420
 aaagaacttg ccagcagaat ggagagtggg cagggaaaca gccatctgc ataaaagcct 480
 gccgagaacc aaagatttca gacctggtga gaaggagagt tcttccg atg cag gtt 536
 Met Gln Val
 1
 cag tca agg gag aca cca tta cac cag cta tac tca gcg gcc ttc agc 584
 Gln Ser Arg Glu Thr Pro Leu His Gln Leu Tyr Ser Ala Ala Phe Ser
 4 9 14 19
 aag cag aaa ctg cag agt gcc cct acc aag aag cca gcc ctt ccc ttt 632
 Lys Gln Lys Leu Gln Ser Ala Pro Thr Lys Lys Pro Ala Leu Pro Phe
 20 25 30 35
 gga gat ctg ccc atg gga tac caa cat ctg cat acc cag ctc cag tat 680
 Gly Asp Leu Pro Met Gly Tyr Gln His Leu His Thr Gln Leu Gln Tyr
 36 41 46 51
 gag tgc atc tca ccc ttc tac cgc cgc ctg ggc agc agc agg agg aca 728
 Glu Cys Ile Ser Pro Phe Tyr Arg Arg Leu Gly Ser Ser Arg Arg Thr
 52 57 62 67
 tgt ctg agg act ggg aag tgg agt ggg cgg gca cca tcc tgc atc cct 776
 Cys Leu Arg Thr Gly Lys Trp Ser Gly Arg Ala Pro Ser Cys Ile Pro
 68 73 78 83

atc tgc ggg aaa att gag aac atc act gct cca aag acc caa ggg ttg	824
Ile Cys Gly Lys Ile Glu Asn Ile Thr Ala Pro Lys Thr Gln Gly Leu	
84 89 94 99	
cgc tgg ccg tgg cag gca gcc atc tac agg agg acc agc ggg gtg cat	872
Arg Trp Pro Trp Gln Ala Ala Ile Tyr Arg Arg Thr Ser Gly Val His	
100 105 110 115	
gac ggc agc cta cac aag gga gcg tgg ttc cta gtc tgc agc ggt gcc	920
Asp Gly Ser Leu His Lys Gly Ala Trp Phe Leu Val Cys Ser Gly Ala	
116 121 126 131	
ctg gtg aat gag cgc act gtg gtg gtg gct gcc cac tgt gtt act gac	968
Leu Val Asn Glu Arg Thr Val Val Val Ala Ala His Cys Val Thr Asp	
132 137 142 147	
ctg ggg aag gtc acc atg atc aag aca gca gac ctg aaa gtt gtt ttg	1016
Leu Gly Lys Val Thr Met Ile Lys Thr Ala Asp Leu Lys Val Val Leu	
148 153 158 163	
ggg aaa ttc tac cgg gat gat gac cgg gat gag aag acc atc cag agc	1064
Gly Lys Phe Tyr Arg Asp Asp Asp Arg Asp Glu Lys Thr Ile Gln Ser	
164 169 174 179	
cta cag att tct gct atc att ctg cat ccc aac tat gac ccc atc ctg	1112
Leu Gln Ile Ser Ala Ile Ile Leu His Pro Asn Tyr Asp Pro Ile Leu	
180 185 190 195	
ctt gat gct gac atc gcc atc ctg aag ctc cta gac aag gcc cgt atc	1160
Leu Asp Ala Asp Ile Ala Ile Leu Lys Leu Leu Asp Lys Ala Arg Ile	
196 201 206 211	
agc acc cga gtc cag ccc atc tgc ctc gct gcc agt cgg gat ctc agc	1208
Ser Thr Arg Val Gln Pro Ile Cys Leu Ala Ala Ser Arg Asp Leu Ser	
212 217 222 227	
act tcc ttc cag gag tcc cac atc act gtg gct ggc tgg aat gtc ctg	1256
Thr Ser Phe Gln Glu Ser His Ile Thr Val Ala Gly Trp Asn Val Leu	
228 233 238 243	
gca gac gtg agg agc cct ggc ttc aag aac gac aca ctg cgc tct ggg	1304
Ala Asp Val Arg Ser Pro Gly Phe Lys Asn Asp Thr Leu Arg Ser Gly	
244 249 254 259	
gtg gtc agt gtg gtg gac tgc ctg ctg tgt gag gag cag cat gag gac	1352
Val Val Ser Val Val Asp Ser Leu Leu Cys Glu Glu Gln His Glu Asp	
260 265 270 275	
cat ggc atc cca gtg agt gtc act gat aac atg ttc tgt gcc agc tgg	1400
His Gly Ile Pro Val Ser Val Thr Asp Asn Met Phe Cys Ala Ser Trp	
276 281 286 291	
gaa ccc act gcc cct tct gat atc tgc act gca gag aca gga ggc atc	1448
Glu Pro Thr Ala Pro Ser Asp Ile Cys Thr Ala Glu Thr Gly Gly Ile	
292 297 302 307	

gcg gct gtg tcc ttc ccg gga cga gca tct cct gag cca cgc tgg cat	1496
Ala Ala Val Ser Phe Pro Gly Arg Ala Ser Pro Glu Pro Arg Trp His	
308 313 318 323	
ctg atg gga ctg gtc agc tgg agc tat gat aaa aca tgc agc cac agg	1544
Leu Met Gly Leu Val Ser Trp Ser Tyr Asp Lys Thr Cys Ser His Arg	
324 329 334 339	
ctc tcc act gcc ttc acc aag gtg ctg cct ttt aaa gac tgg att gaa	1592
Leu Ser Thr Ala Phe Thr Lys Val Leu Pro Phe Lys Asp Trp Ile Glu	
340 345 350 355	
aga aat atg aaa tga accatgctca tgcactcctt gagaagtgtt tctgtatatc	1647
Arg Asn Met Lys	
356	
cgtctgtacg tgtgtcattg cgtgaagcag tgtgggcctg aagtgtgatt tggcctgtga	1707
acttggtctgt gccagggctt ctgacttcag ggacaaaact cagtgaaggg tgagtagacc	1767
tccattgctg gtaggctgat gccgcctcca ctactaggac agccaattgg aagatgccag	1827
ggcttgcaag aagtaagttt cttcaaagaa gaccatatac aaaacctctc cactccactg	1887
acctggtggt cttccccaac tttcagttat acgaatgcca tcagcttgac caggggaagat	1947
ctgggcttca tgaggccctt tttgaggctc tcaagttcta gagagctgcc tgtgggacag	2007
cccagggcag cagagctggg atgtggtgca tgccctttgtg tacatggcca cagtacagtc	2067
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actacaaaaa aaaaa	2142

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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (356) .. (1924)

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ctaaccggg aagcggcagc tgagcgggccc gggaggagcg ccggtccccg tggatcccga	180
gagtgcagag ctcggggcag gggccgggag gcgtggggga gccgggcccct cccctcagga	240
acgtgtcccc gggccgaccc ggcccgtagt gtggaagcag cttcaggtag gtgagctcgt	300

gaaacaatat gaagaggaga aaatagcctt ttaaggaaat tggccacag aaagg atg	358
Met	
1	
gcc ttc ttg gac aat cca act atc att cta gct cat att cga cag tca	406
Ala Phe Leu Asp Asn Pro Thr Ile Ile Leu Ala His Ile Arg Gln Ser	
2 7 12 17	
cat gtg acc agt gat gac acg gga atg tgt gag atg gtt ctc att gat	454
His Val Thr Ser Asp Asp Thr Gly Met Cys Glu Met Val Leu Ile Asp	
18 23 28 33	
cat gat gtt gac cta gag aag att cat cct cct tca atg cct gga gac	502
His Asp Val Asp Leu Glu Lys Ile His Pro Pro Ser Met Pro Gly Asp	
34 39 44 49	
agt ggg tca gaa att cag gga agc aat ggt gag act cag ggc tat gta	550
Ser Gly Ser Glu Ile Gln Gly Ser Asn Gly Glu Thr Gln Gly Tyr Val	
50 55 60 65	
tat gcc cag tca gtc gat att acc tca agt tgg gac ttt ggt att aga	598
Tyr Ala Gln Ser Val Asp Ile Thr Ser Ser Trp Asp Phe Gly Ile Arg	
66 71 76 81	
aga cgc tca aac aca gct caa aga tta gaa cga ctc cga aaa gag aga	646
Arg Arg Ser Asn Thr Ala Gln Arg Leu Glu Arg Leu Arg Lys Glu Arg	
82 87 92 97	
caa aac cag atc aaa tgc aaa aat att cag tgg aaa gaa aga aat tct	694
Gln Asn Gln Ile Lys Cys Lys Asn Ile Gln Trp Lys Glu Arg Asn Ser	
98 103 108 113	
aag caa tca gcc cag gag tta aag tca ctg ttt gaa aaa aaa tct ctc	742
Lys Gln Ser Ala Gln Glu Leu Lys Ser Leu Phe Glu Lys Lys Ser Leu	
114 119 124 129	
aaa gag aag cct cca att tct ggg aag cag tcg ata tta tct gta cgc	790
Lys Glu Lys Pro Pro Ile Ser Gly Lys Gln Ser Ile Leu Ser Val Arg	
130 135 140 145	
cta gaa cag tgc cct ctg cag ctg aat aac cct ttt aac gag tat tcc	838
Leu Glu Gln Cys Pro Leu Gln Leu Asn Asn Pro Phe Asn Glu Tyr Ser	
146 151 156 161	
aaa ttt gat ggc aag ggt cat gta ggt aca aca gca acc aag aag atc	886
Lys Phe Asp Gly Lys Gly His Val Gly Thr Thr Ala Thr Lys Lys Ile	
162 167 172 177	
gat gtc tac ctc cct ctg cac tcg agc cag gac aga ctg ctg cca atg	934
Asp Val Tyr Leu Pro Leu His Ser Ser Gln Asp Arg Leu Leu Pro Met	
178 183 188 193	
acc gtg gtg aca atg gcc agc gcc agg gtg cag gac ctg atc ggg ctc	982
Thr Val Val Thr Met Ala Ser Ala Arg Val Gln Asp Leu Ile Gly Leu	
194 199 204 209	
atc tgc tgg cag tat aca agc gaa gga cgg gag ccg aag ctc aat gac	1030

Ile Cys Trp Gln Tyr Thr Ser Glu Gly Arg Glu Pro Lys Leu Asn Asp	
210 215 220 225	
aat gtc agt gcc tac tgc ctg cat att gct gag gat gat ggg gag gtg	1078
Asn Val Ser Ala Tyr Cys Leu His Ile Ala Glu Asp Asp Gly Glu Val	
226 231 236 241	
gac acc gat ttc ccc ccg ctg gat tcc aat gag ccc att cat aag ttt	1126
Asp Thr Asp Phe Pro Pro Leu Asp Ser Asn Glu Pro Ile His Lys Phe	
242 247 252 257	
ggc ttc agt act ttg gcc ctg gtt gaa aag tac tca tct cct ggt ctg	1174
Gly Phe Ser Thr Leu Ala Leu Val Glu Lys Tyr Ser Ser Pro Gly Leu	
258 263 268 273	
aca tcc aaa gag tca ctc ttt gtt cga ata aat gct gct cat gga ttc	1222
Thr Ser Lys Glu Ser Leu Phe Val Arg Ile Asn Ala Ala His Gly Phe	
274 279 284 289	
tcc ctt att cag gtg gac aac aca aag gtt acc atg aag gaa atc tta	1270
Ser Leu Ile Gln Val Asp Asn Thr Lys Val Thr Met Lys Glu Ile Leu	
290 295 300 305	
ctg aag gca gtg aag cga aga aaa gga tcc cag aaa gtt tca ggc cct	1318
Leu Lys Ala Val Lys Arg Arg Lys Gly Ser Gln Lys Val Ser Gly Pro	
306 311 316 321	
cag tac cgc ctg gag aag cag agc gag ccc aat gtc gcc gtt gac ctg	1366
Gln Tyr Arg Leu Glu Lys Gln Ser Glu Pro Asn Val Ala Val Asp Leu	
322 327 332 337	
gac agc act ttg gag agc cag agc gca tgg gag ttc tgc ctg gtc cgc	1414
Asp Ser Thr Leu Glu Ser Gln Ser Ala Trp Glu Phe Cys Leu Val Arg	
338 343 348 353	
gag aac agt tca agg gca gac ggg gtt ttt gag gag gat tcg caa att	1462
Glu Asn Ser Ser Arg Ala Asp Gly Val Phe Glu Glu Asp Ser Gln Ile	
354 359 364 369	
gac ata gcc aca gta cag gat atg ctt agc agc cac cat tac aag tca	1510
Asp Ile Ala Thr Val Gln Asp Met Leu Ser Ser His His Tyr Lys Ser	
370 375 380 385	
ttc aaa gtc agc atg atc cac aga ctg cga ttc aca acc gac gta cag	1558
Phe Lys Val Ser Met Ile His Arg Leu Arg Phe Thr Thr Asp Val Gln	
386 391 396 401	
cta ggt atc tct gga gac aaa gta gag ata gac cct gtt acg aat cag	1606
Leu Gly Ile Ser Gly Asp Lys Val Glu Ile Asp Pro Val Thr Asn Gln	
402 407 412 417	
aaa gcc agc act aag ttt tgg att aag cag aaa ccc atc tca atc gat	1654
Lys Ala Ser Thr Lys Phe Trp Ile Lys Gln Lys Pro Ile Ser Ile Asp	
418 423 / 428 433	
tcc gac ctg ctc tgt gcc tgt gac ctt gct gaa gag aaa agc ccc agt	1702
Ser Asp Leu Leu Cys Ala Cys Asp Leu Ala Glu Glu Lys Ser Pro Ser	

434	439	444	449	
cac gca ata ttt aaa ctc acg tat cta agc aat	cac gac tat aaa cac	1750		
His Ala Ile Phe Lys Leu Thr Tyr Leu Ser Asn	His Asp Tyr Lys His			
450	455	460	465	
ctc tac ttt gaa tcg gac gct gct acc gtc aat	gaa att gtg ctc aag	1798		
Leu Tyr Phe Glu Ser Asp Ala Ala Thr Val Asn	Glu Ile Val Leu Lys			
466	471	476	481	
gtt aac tac atc ctg gaa tcg cga gct agc act	gcc cgg gct gac tac	1846		
Val Asn Tyr Ile Leu Glu Ser Arg Ala Ser Thr	Ala Arg Ala Asp Tyr			
482	487	492	497	
ttt gct caa aaa caa aga aaa ctg aac aga cgt	acg agc ttc agc ttc	1894		
Phe Ala Gln Lys Gln Arg Lys Leu Asn Arg Arg	Thr Ser Phe Ser Phe			
498	503	508	513	
cag aag gag aag aaa tcc ggg cag cag tga c	actggcctcc agcctcaatc	1945		
Gln Lys Glu Lys Lys Ser Gly Gln Gln *				
514	519			
tggtccgtag ctcagagcct gcctgccagg gccaaagtcc	ctagagccca cccggtgtcc	2005		
tgaagtccctc ggggggaggg cagcccctgg ctactggca	cagggcaggt gggctctcgg	2065		
ggaaggtgtc gggggccccc ctaggaggga gcgctgggga	cattgccatg ggacggaagt	2125		
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acgtgccgcc cagccacctt caatgcctgc caccctgccc	gaggatgtac agagccgtgc	2245		
ccacacattt ccttgcaact tgatcaaatt tcttaaagca	aacaacaaaa atgtacattt	2305		
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ctaaccggg aagcggcagc tgagcgggccc gggaggagcg	ccgggtccccg tggatcccg	180
gagtgcagag ctcggggcag gggccgggag gcgtggggga	gccggggccct cccctcagga	240

acgtgtcccg gggccgaccc ggcccgtagt gtggaagcag cttcaggtag gtgagctcgt 300

gaaacaatat gaagaggaga aaatagcctt ttaaggaaat tggcccacag aaagg atg 358
Met
1

gcc ttc ttg gac aat cca act atc att cta gct cat att cga cag tca 406
Ala Phe Leu Asp Asn Pro Thr Ile Ile Leu Ala His Ile Arg Gln Ser
2 7 12 17

cat gtg acc agt gat gac acg gga atg tgt gag atg gtt ctc att gat 454
His Val Thr Ser Asp Thr Gly Met Cys Glu Met Val Leu Ile Asp
18 23 28 33

cat gat gtt gac cta gag aag att cat cct cct tca atg cct gga gac 502
His Asp Val Asp Leu Glu Lys Ile His Pro Pro Ser Met Pro Gly Asp
34 39 44 49

agt ggg tca gaa att cag gga agc aat ggt gag act cag ggc tat gta 550
Ser Gly Ser Glu Ile Gln Gly Ser Asn Gly Glu Thr Gln Gly Tyr Val
50 55 60 65

tat gcc cag tca gtc gat att acc tca agt tgg gac ttt ggt att aga 598
Tyr Ala Gln Ser Val Asp Ile Thr Ser Ser Trp Asp Phe Gly Ile Arg
66 71 76 81

aga cgc tca aac aca gct caa aga tta gaa cga ctc cga aaa gag aga 646
Arg Arg Ser Asn Thr Ala Gln Arg Leu Glu Arg Leu Arg Lys Glu Arg
82 87 92 97

caa aac cag atc aaa tgc aaa aat att cag tgg aaa gaa aga aat tct 694
Gln Asn Gln Ile Lys Cys Lys Asn Ile Gln Trp Lys Glu Arg Asn Ser
98 103 108 113

aag caa tca gcc cag gag tta aag tca ctg ttt gaa aaa aaa tct ctc 742
Lys Gln Ser Ala Gln Glu Leu Lys Ser Leu Phe Glu Lys Lys Ser Leu
114 119 124 129

aaa gag aag cct cca att tct ggg aag cag tcg ata tta tct gta cgc 790
Lys Glu Lys Pro Pro Ile Ser Gly Lys Gln Ser Ile Leu Ser Val Arg
130 135 140 145

cta gaa cag tgc cct ctg cag ctg aat aac cct ttt aac gag tat tcc 838
Leu Glu Gln Cys Pro Leu Gln Leu Asn Asn Pro Phe Asn Glu Tyr Ser
146 151 156 161

aaa ttt gat ggc aag ggt cat gta ggt aca aca gca acc aag aag atc 886
Lys Phe Asp Gly Lys Gly His Val Gly Thr Thr Ala Thr Lys Lys Ile
162 167 172 177

gat gtc tac ctc cct ctg cac tcg agc cag gac aga ctg ctg cca atg 934
Asp Val Tyr Leu Pro Leu His Ser Ser Gln Asp Arg Leu Leu Pro Met
178 183 188 193

acc gtg gtg aca atg gcc agc gcc agg gtg cag gac ctg atc ggg ctc 982
Thr Val Val Thr Met Ala Ser Ala Arg Val Gln Asp Leu Ile Gly Leu
194 199 204 209

atc tgc tgg cag tat aca agc gaa gga cgg gag ccg aag ctc aat gac	1030
Ile Cys Trp Gln Tyr Thr Ser Glu Gly Arg Glu Pro Lys Leu Asn Asp	
210 215 220 225	
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Asn Val Ser Ala Tyr Cys Leu His Ile Ala Glu Asp Asp Gly Glu Val	
226 231 236 241	
gac acc gat ttc ccc ccg ctg gat tcc aat gag ccc att cat aag ttt	1126
Asp Thr Asp Phe Pro Pro Leu Asp Ser Asn Glu Pro Ile His Lys Phe	
242 247 252 257	
ggc ttc agt act ttg gcc ctg gtt gaa aag tac tca tct cct ggt ctg	1174
Gly Phe Ser Thr Leu Ala Leu Val Glu Lys Tyr Ser Ser Pro Gly Leu	
258 263 268 273	
aca tcc aaa gag tca ctc ttt gtt cga ata aat gct gct cat gga ttc	1222
Thr Ser Lys Glu Ser Leu Phe Val Arg Ile Asn Ala Ala His Gly Phe	
274 279 284 289	
tcc ctt att cag gtg gac aac aca aag gtt acc atg aag gaa atc tta	1270
Ser Leu Ile Gln Val Asp Asn Thr Lys Val Thr Met Lys Glu Ile Leu	
290 295 300 305	
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Leu Lys Ala Val Lys Arg Arg Lys Gly Ser Gln Lys Val Ser Gly Ser	
306 311 316 321	
agg gca gac ggg gtt ttt gag gag gat tgc caa att gac ata gcc aca	1366
Arg Ala Asp Gly Val Phe Glu Glu Asp Ser Gln Ile Asp Ile Ala Thr	
322 327 332 337	
gta cag gat atg ctt agc agc cac cat tac aag tca ttc aaa gtc agc	1414
Val Gln Asp Met Leu Ser Ser His His Tyr Lys Ser Phe Lys Val Ser	
338 343 348 353	
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Met Ile His Arg Leu Arg Phe Thr Thr Asp Val Gln Leu Gly Ile Ser	
354 359 364 369	
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Gly Asp Lys Val Glu Ile Asp Pro Val Thr Asn Gln Lys Ala Ser Thr	
370 375 380 385	
aag ttt tgg att aag cag aaa ccc atc tca atc gat tcc gac ctg ctc	1558
Lys Phe Trp Ile Lys Gln Lys Pro Ile Ser Ile Asp Ser Asp Leu Leu	
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tgt gcc tgt gac ctt gct gaa gag aaa agc ccc agt cac gca ata ttt	1606
Cys Ala Cys Asp Leu Ala Glu Glu Lys Ser Pro Ser His Ala Ile Phe	
402 407 412 417	
aaa ctc acg tat cta agc aat cac gac tat aaa cac ctc tac ttt gaa	1654
Lys Leu Thr Tyr Leu Ser Asn His Asp Tyr Lys His Leu Tyr Phe Glu	
418 423 428 433	

tcg gac gct gct acc gtc aat gaa att gtg ctc aag gtt aac tac atc	1702
Ser Asp Ala Ala Thr Val Asn Glu Ile Val Leu Lys Val Asn Tyr Ile	
434 439 444 449	

ctg gaa tcg cga gct agc act gcc cgg gct gac tac ttt gct caa aaa	1750
Leu Glu Ser Arg Ala Ser Thr Ala Arg Ala Asp Tyr Phe Ala Gln Lys	
450 455 460 465	

caa aga aaa ctg aac aga cgt acg agc ttc agc ttc cag aag gag aag	1798
Gln Arg Lys Leu Asn Arg Arg Thr Ser Phe Ser Phe Gln Lys Glu Lys	
466 471 476 481	

aaa tcc ggg cag cag tga cactgg cctccagcct caatctgttc cgtagctcag	1852
Lys Ser Gly Gln Gln *	
482 487	

agcctgcctg ccaggggccaa gtgccctaga gccacccgg tgctcctgaag tcctcggggg	1912
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gaggccagcc cctgggtcac tggcacaggg cagggtgggct ctcggggaag gtgtcggggg	1972
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ccccctagg agggagcgct ggggacattg ccatgggacg gaagtctgct tggcagtggc	2032
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tttgataagc gatgcttggg ggtcagacca cccctagag gagccacgtg ccgcccagcc	2092
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accttcaatg cctgccaccc tgcccagagga tgtacagagc cgtgcccaca catttccttg	2152
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caacttgatc aaatttctta aagcaaaca caaaaatgta catttctgtt tttcctttta	2212
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ctaaccggg aagcggcagc tgagcggggc gggaggagcg ccgggtccccg tggatccccg	180
gagtgcagag ctcggggcag gggccgggag gcgtggggga gccgggccct cccctcagga	240
acgtgtcccc gggccgaccc ggcccgtagt gtggaagcag cttcaggtag gtgagctcgt	300
gaaacaatat gaagaggaga aaatagcctt ttaaggaaat tggccacag aaagg atg	358
Met	

gcc ttc ttg gac aat cca act atc att cta gct cat att cga cag tca	406
Ala Phe Leu Asp Asn Pro Thr Ile Ile Leu Ala His Ile Arg Gln Ser	
2 7 12 17	
cat gtg acc agt gat gac acg gga atg tgt gag atg gtt ctc att gat	454
His Val Thr Ser Asp Asp Thr Gly Met Cys Glu Met Val Leu Ile Asp	
18 23 28 33	
cat gat gtt gac cta gag aag att cat cct cct tca atg cct gga gac	502
His Asp Val Asp Leu Glu Lys Ile His Pro Pro Ser Met Pro Gly Asp	
34 39 44 49	
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Ser Gly Ser Glu Ile Gln Gly Ser Asn Gly Glu Thr Gln Gly Tyr Val	
50 55 60 65	
tat gcc cag tca gtc gat att acc tca agt tgg gac ttt ggt att aga	598
Tyr Ala Gln Ser Val Asp Ile Thr Ser Ser Trp Asp Phe Gly Ile Arg	
66 71 76 81	
aga cgc tca aac aca gct caa aga tta gaa cga ctc cga aaa gag aga	646
Arg Arg Ser Asn Thr Ala Gln Arg Leu Glu Arg Leu Arg Lys Glu Arg	
82 87 92 97	
caa aac cag atc aaa tgc aaa aat att cag tgg aaa gaa aga aat tct	694
Gln Asn Gln Ile Lys Cys Lys Asn Ile Gln Trp Lys Glu Arg Asn Ser	
98 103 108 113	
aag caa tca gcc cag gag tta aag tca ctg ttt gaa aaa aaa tct ctc	742
Lys Gln Ser Ala Gln Glu Leu Lys Ser Leu Phe Glu Lys Lys Ser Leu	
114 119 124 129	
aaa gag aag cct cca att tct ggg aag cag tcg ata tta tct gta cgc	790
Lys Glu Lys Pro Pro Ile Ser Gly Lys Gln Ser Ile Leu Ser Val Arg	
130 135 140 145	
cta gaa cag tgc cct ctg cag ctg aat aac cct ttt aac gag tat tcc	838
Leu Glu Gln Cys Pro Leu Gln Leu Asn Asn Pro Phe Asn Glu Tyr Ser	
146 151 156 161	
aaa ttt gat ggc aag ggt cat gta ggt aca aca gca acc aag aag atc	886
Lys Phe Asp Gly Lys Gly His Val Gly Thr Thr Ala Thr Lys Lys Ile	
162 167 172 177	
gat gtc tac ctc cct ctg cac tcg agc cag gac aga ctg ctg cca atg	934
Asp Val Tyr Leu Pro Leu His Ser Ser Gln Asp Arg Leu Leu Pro Met	
178 183 188 193	
acc gtg gtg aca atg gcc agc gcc agg gtg cag gac ctg atc ggg ctc	982
Thr Val Val Thr Met Ala Ser Ala Arg Val Gln Asp Leu Ile Gly Leu	
194 199 204 209	
atc tgc tgg cag tat aca agc gaa gga cgg gag ccg aag ctc aat gac	1030
Ile Cys Trp Gln Tyr Thr Ser Glu Gly Arg Glu Pro Lys Leu Asn Asp	
210 215 220 225	
aat gtc agt gcc tac tgc ctg cat att gct gag gat gat ggg gag gtg	1078

Asn Val Ser Ala Tyr Cys Leu His Ile Ala Glu Asp Asp Gly Glu Val	
226 231 236 241	
gac acc gat ttc ccc ccg ctg gat tcc aat gag ccc att cat aag ttt	1126
Asp Thr Asp Phe Pro Pro Leu Asp Ser Asn Glu Pro Ile His Lys Phe	
242 247 252 257	
ggc ttc agt act ttg gcc ctg gtt gaa aag tac tca tct cct ggt ctg	1174
Gly Phe Ser Thr Leu Ala Leu Val Glu Lys Tyr Ser Ser Pro Gly Leu	
258 263 268 273	
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Thr Ser Lys Glu Ser Leu Phe Val Arg Ile Asn Ala Ala His Gly Phe	
274 279 284 289	
tcc ctt att cag gtg gac aac aca aag gtt acc atg aag gaa atc tta	1270
Ser Leu Ile Gln Val Asp Asn Thr Lys Val Thr Met Lys Glu Ile Leu	
290 295 300 305	
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Leu Lys Ala Val Lys Arg Arg Lys Gly Ser Gln Lys Val Ser Gly Pro	
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Gln Tyr Arg Leu Glu Lys Gln Ser Glu Pro Asn Val Ala Val Asp Leu	
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Asp Ser Thr Leu Glu Ser Gln Ser Ala Trp Glu Phe Cys Leu Val Arg	
338 343 348 353	
gag aac agt atc tct gga gac aaa gta gag ata gac cct gtt acg aat	1462
Glu Asn Ser Ile Ser Gly Asp Lys Val Glu Ile Asp Pro Val Thr Asn	
354 359 364 369	
cag aaa gcc agc act aag ttt tgg att aag cag aaa ccc atc tca atc	1510
Gln Lys Ala Ser Thr Lys Phe Trp Ile Lys Gln Lys Pro Ile Ser Ile	
370 375 380 385	
gat tcc gac ctg ctc tgt gcc tgt gac ctt gct gaa gag aaa agc ccc	1558
Asp Ser Asp Leu Leu Cys Ala Cys Asp Leu Ala Glu Glu Lys Ser Pro	
386 391 396 401	
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Ser His Ala Ile Phe Lys Leu Thr Tyr Leu Ser Asn His Asp Tyr Lys	
402 407 412 417	
cac ctc tac ttt gaa tcg gac gct gct acc gtc aat gaa att gtg ctc	1654
His Leu Tyr Phe Glu Ser Asp Ala Ala Thr Val Asn Glu Ile Val Leu	
418 423 428 433	
aag gtt aac tac atc ctg gaa tcg cga gct agc act gcc cgg gct gac	1702
Lys Val Asn Tyr Ile Leu Glu Ser Arg Ala Ser Thr Ala Arg Ala Asp	
434 439 444 449	
tac ttt gct caa aaa caa aga aaa ctg aac aga cgt acg agc ttc agc	1750
Tyr Phe Ala Gln Lys Gln Arg Lys Leu Asn Arg Arg Thr Ser Phe Ser	

450	455	460	465	
ttc cag aag gag aag aaa tcc ggg cag cag tga cactggcc tccagcctca				1801
Phe Gln Lys Glu Lys Lys Ser Gly Gln Gln *				
466	471	476		
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tcctgaagtc ctcgggggga ggccagcccc tggctcactg gcacagggca ggtgggctct				1921
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tgcccacaca tttccttgca acttgatcaa atttcttaaa gcaaacaaca aaaatgtaca				2161
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g atg gcg gag gtg cag gtc ctg gtg ctt gat ggt cga ggc cat ctc	166
Met Ala Glu Val Gln Val Leu Val Leu Asp Gly Arg Gly His Leu	
1 5 10	
ctg ggc cgc ctg gcg gcc atc gtg gct aaa cag gta ctg ctg ggc cgg	214
Leu Gly Arg Leu Ala Ala Ile Val Ala Lys Gln Val Leu Leu Gly Arg	
16 21 26 31	
aag gtg gtg gtc gta cgc tgt gaa ggc atc aac att tct ggc aat ttc	262
Lys Val Val Val Val Arg Cys Glu Gly Ile Asn Ile Ser Gly Asn Phe	
32 37 42 47	
tac aga aac aag ttg aag tac ctg gct ttc ctc cgc aag cgg atg aac	310
Tyr Arg Asn Lys Leu Lys Tyr Leu Ala Phe Leu Arg Lys Arg Met Asn	
48 53 58 63	
acc aac cct tcc cga ggc ccc tac cac ttc cgg gcc ccc agc cgc atc	358
Thr Asn Pro Ser Arg Gly Pro Tyr His Phe Arg Ala Pro Ser Arg Ile	
64 69 74 79	

ttc tgg cgg acc gtg cga ggt atg ctg ccc cac aaa acc aag cga ggc	406
Phe Trp Arg Thr Val Arg Gly Met Leu Pro His Lys Thr Lys Arg Gly	
80 85 90 95	
cag gcc gct ctg gac cgt ctc aag gtg ttt gac ggc atc cca ccg ccc	454
Gln Ala Ala Leu Asp Arg Leu Lys Val Phe Asp Gly Ile Pro Pro Pro	
96 101 106 111	
tac gac aag aaa aag cgg atg gtg gtt cct gct gcc ctc aag gtc gtg	502
Tyr Asp Lys Lys Lys Arg Met Val Val Pro Ala Ala Leu Lys Val Val	
112 117 122 127	
cgt ctg aag cct aca aga aag ttt gcc tat ctg ggg cgc ctg gct cac	550
Arg Leu Lys Pro Thr Arg Lys Phe Ala Tyr Leu Gly Arg Leu Ala His	
128 133 138 143	
gag gtt ggc tgg aag tac cag gca gtg aca gcc acc ctg gag gag aag	598
Glu Val Gly Trp Lys Tyr Gln Ala Val Thr Ala Thr Leu Glu Glu Lys	
144 149 154 159	
agg aaa gag aaa gcc aag atc cac tac cgg aag aag aaa cag ctc atg	646
Arg Lys Glu Lys Ala Lys Ile His Tyr Arg Lys Lys Lys Gln Leu Met	
160 165 170 175	
agg cta cgg aaa cag gcc gag aag aac gtg gag aag aaa att gac aaa	694
Arg Leu Arg Lys Gln Ala Glu Lys Asn Val Glu Lys Lys Ile Asp Lys	
176 181 186 191	
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Tyr Thr Glu Val Leu Lys Thr His Gly Leu Leu Val *	
192 197 202	
gactgttaat tctcatgcg ttgcctgccc ttctccatt gttgccctgg aatgtacggg	803
accagggggc agcagcagtc caggtgccac aggcagccct gggacatagg aagctgggag	863
caaggaaagg gtcttagtca ctgcctcccg aagttgcttg aaagcactcg gagaattgtg	923
caggtgtcat ttatctatga ccaataggaa gagcaaccag ttactatgag tgaaagggag	983
ccagaagact gattggaggg ccctatcttg tgagtggggc atctgttgga ctttccacct	1043
ggcatatac tctgcagctg ttagaatgtg caagcacttg gggacagcat gagcttgctg	1103
ttgtacacag ggtatttcta gaagcagaaa tagactggga agatgcacaa ccaagggggt	1163
acaggcatcg cccatgctcc tcacctgtat ttgtaatca gaaataaatt gcttttaaag	1223
aaaaaaaaa	1233

<210> /1011

<211>, 828

<212> DNA

<213> Homo sapiens

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<222> (1)...(828)
<223> n = a,t,c or g
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[illegible]

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Val Gln Arg Val Gly Lys Ser Val Leu Val Gly Asn Ile Asn Met Trp				
181	186	191	196	
gtg tat cgg atg gag acg att ctc cac tgg cag cag cag ctg aac aac				680
Val Tyr Arg Met Glu Thr Ile Leu His Trp Gln Gln Gln Leu Asn Asn				
197	202	207	212	
att cag atc acc agg gta agc ggg cag gcc cag cct cct ccc ggc agt				728
Ile Gln Ile Thr Arg Val Ser Gly Gln Ala Gln Pro Pro Pro Gly Ser				
213	218	223	228	
ggg tcc ctc cac agg gat act gga cag cct cgc caa gac ttt gaa ttc				776
Gly Ser Leu His Arg Asp Thr Gly Gln Pro Arg Gln Asp Phe Glu Phe				
229	234	239	244	
act cct gtg acg gaa gag tct ggt ctt ttc tga tctgctgc cttgttctgg				827
Thr Pro Val Thr Glu Glu Ser Gly Leu Phe *				
245	250	255		
t				828

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 <213> Homo sapiens

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cccttcatgg ggccagagcc ctctctccag aatctgagca gca atg ccg ttt gct	175
Met Pro Phe Ala	
1	
gaa gac aag acc tat aag tat atc tgc cgc aat ttc agc aat ttt tgc	223
Glu Asp Lys Thr Tyr Lys Tyr Ile Cys Arg Asn Phe Ser Asn Phe Cys	
5 10 15 20	
aat gtg gat gtt gta gag att ctg cct tac ctg ccc tgc ctc aca gca	271
Asn Val Asp Val Val Glu Ile Leu Pro Tyr Leu Pro Cys Leu Thr Ala	
21 26 31 36	
aga gac cag gat cga ctg cgg gcc acc tgc aca ctc tca ggg aac cgg	319
Arg Asp Gln Asp Arg Leu Arg Ala Thr Cys Thr Leu Ser Gly Asn Arg	
37 42 47 52	

gac acc ctc tgg cat ctc ttc aat acc ctt cag cgg cgg ccc ggc tgg	367
Asp Thr Leu Trp His Leu Phe Asn Thr Leu Gln Arg Arg Pro Gly Trp	
53 58 63 68	
gtg gag tac ttc att gcg gca ctg agg ggc tgt gag cta gtt gat ctc	415
Val Glu Tyr Phe Ile Ala Ala Leu Arg Gly Cys Glu Leu Val Asp Leu	
69 74 79 84	
gcg gac gaa gtg gcc tct gtc tac cag agc tac cag cct cgg acc tcg	463
Ala Asp Glu Val Ala Ser Val Tyr Gln Ser Tyr Gln Pro Arg Thr Ser	
85 90 95 100	
gac cgt ccc cca gac cca ctg gag cca ccg tca ctt cct gct gag agg	511
Asp Arg Pro Pro Asp Pro Leu Glu Pro Pro Ser Leu Pro Ala Glu Arg	
101 106 111 116	
cca ggg ccc ccc aca cct gct gcg gcc cac agc atc ccc tac aac agc	559
Pro Gly Pro Pro Thr Pro Ala Ala Ala His Ser Ile Pro Tyr Asn Ser	
117 122 127 132	
tgc aga gag aag gag cca agt tac ccc atg cct gtc cag gag acc cag	607
Cys Arg Glu Lys Glu Pro Ser Tyr Pro Met Pro Val Gln Glu Thr Gln	
133 138 143 148	
gcg cca gag tcc cca gga gag aat tca gag caa gcc ctg cag acg ctc	655
Ala Pro Glu Ser Pro Gly Glu Asn Ser Glu Gln Ala Leu Gln Thr Leu	
149 154 159 164	
agc ccc aga gcc atc cca agg aat cca gat ggt ggc ccc ctg gag tcc	703
Ser Pro Arg Ala Ile Pro Arg Asn Pro Asp Gly Gly Pro Leu Glu Ser	
165 170 175 180	
tcc tct gac ctg gca gcc ctc agc cct ctg acc tcc agc ggg cat cag	751
Ser Ser Asp Leu Ala Ala Leu Ser Pro Leu Thr Ser Ser Gly His Gln	
181 186 191 196	
gag cag gac aca gaa ctg ggc agt acc cac aca gca ggt gcg acc tcc	799
Glu Gln Asp Thr Glu Leu Gly Ser Thr His Thr Ala Gly Ala Thr Ser	
197 202 207 212	
agc ctc aca cca tcc cgt ggg cct gtg tct cca tct gtc tcc ttc cag	847
Ser Leu Thr Pro Ser Arg Gly Pro Val Ser Pro Ser Val Ser Phe Gln	
213 218 223 228	
ccc ctg gcc cgt tcc acc ccc agg gca agc cgc ttg cct gga ccc aca	895
Pro Leu Ala Arg Ser Thr Pro Arg Ala Ser Arg Leu Pro Gly Pro Thr	
229 234 239 244	
ggg tca gtt gta tct act ggc acc tcc ttc tcc tcc tca tcc cct ggc	943
Gly Ser Val Val Ser Thr Gly Thr Ser Phe Ser Ser Ser Ser Pro Gly	
245 250 255 260	
ttg gcc tct gca ggg gct gca gag ggt aaa cag ggt gca gag agt gac	991
Leu Ala Ser Ala Gly Ala Ala Glu Gly Lys Gln Gly Ala Glu Ser Asp	
261 266 271 276	
cag gcc gag cct atc atc tgc tcc agt ggg gca gag gca cct gcc aac	1039

Gln Ala Glu Pro Ile Ile Cys Ser Ser Gly Ala Glu Ala Pro Ala Asn	
277 282 287 292	
tct ctg ccc tcc aaa gtg cct acc acc ttg atg cct gtg aac aca gtg	1087
Ser Leu Pro Ser Lys Val Pro Thr Thr Leu Met Pro Val Asn Thr Val	
293 298 303 308	
gcc ctg aaa gtg cct gcc aac cca gca tct gtc agc aca gtg ccc tcc	1135
Ala Leu Lys Val Pro Ala Asn Pro Ala Ser Val Ser Thr Val Pro Ser	
309 314 319 324	
aag ttg cca act agc tca aag ccc cct ggt gca gtg cct tct aat gcg	1183
Lys Leu Pro Thr Ser Ser Lys Pro Pro Gly Ala Val Pro Ser Asn Ala	
325 330 335 340	
ctc acc aat cca gca cca tcc aaa ttg ccc atc aac tca acc cgt gct	1231
Leu Thr Asn Pro Ala Pro Ser Lys Leu Pro Ile Asn Ser Thr Arg Ala	
341 346 351 356	
ggc atg gtg cca tcc aaa gtg cct act agc atg gtg ctc acc aag gtg	1279
Gly Met Val Pro Ser Lys Val Pro Thr Ser Met Val Leu Thr Lys Val	
357 362 367 372	
tct gcc agc aca gtc ccc act gac ggg agc agc aga aat gag gag acc	1327
Ser Ala Ser Thr Val Pro Thr Asp Gly Ser Ser Arg Asn Glu Glu Thr	
373 378 383 388	
cca gca gct cca aca ccc gcc ggc gcc act gga ggc agc tca gcc tgg	1375
Pro Ala Ala Pro Thr Pro Ala Gly Ala Thr Gly Gly Ser Ser Ala Trp	
389 394 399 404	
cta gac agc agc tct gag aat agg ggc ctt ggg tcg gag ctg agt aag	1423
Leu Asp Ser Ser Ser Glu Asn Arg Gly Leu Gly Ser Glu Leu Ser Lys	
405 410 415 420	
cct ggc gtg ctg gca tcc cag gta gac agc ccg ttc tcg ggc tgc ttc	1471
Pro Gly Val Leu Ala Ser Gln Val Asp Ser Pro Phe Ser Gly Cys Phe	
421 426 431 436	
gag gat ctt gcc atc agt gcc agc acc tcc ttg ggc atg ggg ccc tgc	1519
Glu Asp Leu Ala Ile Ser Ala Ser Thr Ser Leu Gly Met Gly Pro Cys	
437 442 447 452	
cat ggc cca gag gag aat gag tat aag tcc gag ggc acc ttt ggg atc	1567
His Gly Pro Glu Glu Asn Glu Tyr Lys Ser Glu Gly Thr Phe Gly Ile	
453 458 463 468	
cac gtg gct gag aac ccc agc atc cag ctc ctg gag ggc aac cct ggg	1615
His Val Ala Glu Asn Pro Ser Ile Gln Leu Leu Glu Gly Asn Pro Gly	
469 474 479 484	
cca cct gcg gac ccg gat ggc ggc ccc agg cca caa gcc gac cgg aag	1663
Pro Pro Ala Asp Pro Asp Gly Gly Pro Arg Pro Gln Ala Asp Arg Lys	
485 490 495 500	
ttc cag gag agg gag gtg cca tgc cac agg ccc tca cct ggg gct ctg	1711
Phe Gln Glu Arg Glu Val Pro Cys His Arg Pro Ser Pro Gly Ala Leu	

501	506	511	516	
tgg ctc cag gtg gct	gtg aca ggg gtg ctg gta gtc aca ctc ctg gtg			1759
Trp Leu Gln Val Ala	Val Thr Gly Val Leu Val Val Thr Leu Leu Val			
517	522	527	532	
gtg ctg tac cgg cgg cgt ctg cac tag tgaag ccctgggctc ttccccccaa				1811
Val Leu Tyr Arg Arg Arg Leu His *				
533	538			
aaaaaaaaaa aa				1823

<210> 1013
 <211> 828
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (202)..(501)

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taaaaatgta gattagataa actgcaccta ttacacccaa cagcaatgag cttttcatga	180
gttgaaaaaa agaaaaaacc c atg tcg gcc cca gcc ctg ggg cta cct gac	231
Met Ser Ala Pro Ala Leu Gly Leu Pro Asp	
1 5	
ctg aca aaa cct ttt aca ctc tat gtg tca gaa aga gaa aaa gtg gca	279
Leu Thr Lys Pro Phe Thr Leu Tyr Val Ser Glu Arg Glu Lys Val Ala	
11 16 21 26	
gtt gga gtt tta acc cag act gta ggg ccc tgg cca agg cca gtg gcc	327
Val Gly Val Leu Thr Gln Thr Val Gly Pro Trp Pro Arg Pro Val Ala	
27 32 37 42	
tat ctc tca aaa caa cta gat gag gtt tcc aaa cgc tgg ccc cca tgt	375
Tyr Leu Ser Lys Gln Leu Asp Glu Val Ser Lys Arg Trp Pro Pro Cys	
43 48 53 58	
cca aag tcc ctg gta gca ata gcc ctg tta gca caa gaa gca gat aag	423
Pro Lys Ser Leu Val Ala Ile Ala Leu Leu Ala Gln Glu Ala Asp Lys	
59 64 69 74	
cta act ctt aga caa aac cta aac ata aag tcc ccc tgt gct gtg gtg	471
Leu Thr Leu Arg Gln Asn Leu Asn Ile Lys Ser Pro Cys Ala Val Val	
75 80 85 90	
att tta ata aat acc aaa gga cac cat tag c taatgaatgc tagactagct	522
Ile Leu Ile Asn Thr Lys Gly His His *	

91

96

agataacaaa gcttgctctg tgaacatccc cgcataacca ttgaagtttg caaacacctaa 582
 accccgccac cttcctcccg gtgtcagaga gccaggttaa acataactgt gtagagggtat 642
 tggactcagt ttattctagt gggcctaacc accgagacca tccttaaaca tcagtagact 702
 gggagctgta catggatggg agcagcttca ccaaccctg caaagtgact ctgaagaaga 762
 cgacaagccc tgctccagtc acaccggaa gctgagtggg tcacgcacag ctggagcatg 822
 aggaaa 828

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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (106)..(2172)

<400> 1014

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 Met Gln Val
 1
 tcc agc ctc aat gag gtg aag att tac agc ctc agc tgc ggc aag tcc 162
 Ser Ser Leu Asn Glu Val Lys Ile Tyr Ser Leu Ser Cys Gly Lys Ser
 4 9 14 19
 ctt cct gag tgg ctt tct gat agg aag aag aga gcg cta cag aag aaa 210
 Leu Pro Glu Trp Leu Ser Asp Arg Lys Lys Arg Ala Leu Gln Lys Lys
 20 25 30 35
 gat gta gat gtc cgt agg aga att gaa ctt att cag gac ttt gaa atg 258
 Asp Val Asp Val Arg Arg Arg Ile Glu Leu Ile Gln Asp Phe Glu Met
 36 41 46 51
 cct act gtg tgt acc act att aag gtg tca aaa gat gga cag tac att 306
 Pro Thr Val Cys Thr Thr Ile Lys Val Ser Lys Asp Gly Gln Tyr Ile
 52 57 62 67
 tta gca act gga aca tat aaa cct cgg gtt cga tgt tat gac acc tat 354
 Leu Ala Thr Gly Thr Tyr Lys Pro Arg Val Arg Cys Tyr Asp Thr Tyr
 68 73 78 83
 caa tta tcc ttg aag ttt gaa agg tgt tta gat tca gaa gtt gtc acc 402
 Gln Leu Ser Leu Lys Phe Glu Arg Cys Leu Asp Ser Glu Val Val Thr
 84 89 94 99

ttt gaa att ttg tct gat gac tac tca aag att gtc ttc tta cat aat	450
Phe Glu Ile Leu Ser Asp Asp Tyr Ser Lys Ile Val Phe Leu His Asn	
100 105 110 115	
gat aga tac att gaa ttt cat tcg caa tca ggt ttt tac tac aaa acc	498
Asp Arg Tyr Ile Glu Phe His Ser Gln Ser Gly Phe Tyr Tyr Lys Thr	
116 121 126 131	
aga ata cca aag ttt ggg aga gat ttc tct tac cac tat cca tcc tgt	546
Arg Ile Pro Lys Phe Gly Arg Asp Phe Ser Tyr His Tyr Pro Ser Cys	
132 137 142 147	
gac ttg tac ttt gtt ggt gca agt tct gaa gtt tat agg tta aac tta	594
Asp Leu Tyr Phe Val Gly Ala Ser Ser Glu Val Tyr Arg Leu Asn Leu	
148 153 158 163	
gaa caa gga cga tac ctg aat cct cta caa act gat gct gcg gag aat	642
Glu Gln Gly Arg Tyr Leu Asn Pro Leu Gln Thr Asp Ala Ala Glu Asn	
164 169 174 179	
aat gtt tgt gac ata aat tca gtg cat ggc ttg ttt gcc aca gga acc	690
Asn Val Cys Asp Ile Asn Ser Val His Gly Leu Phe Ala Thr Gly Thr	
180 185 190 195	
ata gag ggt aga gtg gag tgc tgg gac cca aga act cga aac aga gtt	738
Ile Glu Gly Arg Val Glu Cys Trp Asp Pro Arg Thr Arg Asn Arg Val	
196 201 206 211	
ggc ctg tta gac tgc gcc tta aac agt gtc aca gca gat tca gag ata	786
Gly Leu Leu Asp Cys Ala Leu Asn Ser Val Thr Ala Asp Ser Glu Ile	
212 217 222 227	
aac agt tta cca aca atc tct gct ttg aaa ttt aat ggt gcc ttg acc	834
Asn Ser Leu Pro Thr Ile Ser Ala Leu Lys Phe Asn Gly Ala Leu Thr	
228 233 238 243	
atg gca gtt gga aca acc aca ggg cag gtt tta tta tat gac ctt cga	882
Met Ala Val Gly Thr Thr Thr Gly Gln Val Leu Leu Tyr Asp Leu Arg	
244 249 254 259	
tct gat aag cca ttg cta gtt aaa gat cac cag tat ggg ctg ccc att	930
Ser Asp Lys Pro Leu Leu Val Lys Asp His Gln Tyr Gly Leu Pro Ile	
260 265 270 275	
aag tcc gtt cat ttc cag gat tca tta gat ctg att ttg tct gct gac	978
Lys Ser Val His Phe Gln Asp Ser Leu Asp Leu Ile Leu Ser Ala Asp	
276 281 286 291	
tct cga att gtc aag atg tgg aat aag aac tcc gga aaa ata ttt act	1026
Ser Arg Ile Val Lys Met Trp Asn Lys Asn Ser Gly Lys Ile Phe Thr	
292 297 302 307	
tcc ttg gag cca gag cat gac ctt aat gat gtt tgt ctc tac ccc aac	1074
Ser Leu Glu Pro Glu His Asp Leu Asn Asp Val Cys Leu Tyr Pro Asn	
308 313 318 323	
tca ggc atg ctt ctg acg gcc aat gaa acc ccc aag atg ggc atc tat	1122

Ser Gly Met Leu Leu Thr Ala Asn Glu Thr Pro Lys Met Gly Ile Tyr	
324 329 334 339	
tac att cca gtt ttg ggt cct gct cct cgg tgg tgt tcc ttc tta gac	1170
Tyr Ile Pro Val Leu Gly Pro Ala Pro Arg Trp Cys Ser Phe Leu Asp	
340 345 350 355	
aac ttg acc gaa gaa tta gaa gag aat cca gaa agc aca gtc tat gat	1218
Asn Leu Thr Glu Glu Leu Glu Glu Asn Pro Glu Ser Thr Val Tyr Asp	
356 361 366 371	
gat tat aaa ttt gtc acc aag aaa gac ctt gaa aat tta ggg ctc acc	1266
Asp Tyr Lys Phe Val Thr Lys Lys Asp Leu Glu Asn Leu Gly Leu Thr	
372 377 382 387	
cac ctc att gga tct cct ttc ctc cgg gca tat atg cat ggg ttt ttc	1314
His Leu Ile Gly Ser Pro Phe Leu Arg Ala Tyr Met His Gly Phe Phe	
388 393 398 403	
atg gat ata aga ctc tat cac aag gtg aaa ctg atg gta aat cca ttt	1362
Met Asp Ile Arg Leu Tyr His Lys Val Lys Leu Met Val Asn Pro Phe	
404 409 414 419	
gct tat gaa gaa tat agg aaa gat aaa ata cga cag aaa ata gaa gaa	1410
Ala Tyr Glu Glu Tyr Arg Lys Asp Lys Ile Arg Gln Lys Ile Glu Glu	
420 425 430 435	
aca cgt gca cag aga gtc cag tta aag aaa ttg cca aaa gtt aac aaa	1458
Thr Arg Ala Gln Arg Val Gln Leu Lys Lys Leu Pro Lys Val Asn Lys	
436 441 446 451	
gag ctg gca ctt aaa tta att gag gaa gaa gag gag aag cag aaa tct	1506
Glu Leu Ala Leu Lys Leu Ile Glu Glu Glu Glu Glu Lys Gln Lys Ser	
452 457 462 467	
aca tgg aaa aag aaa gtt aag agt ctt cct aat att ctc acc gat gat	1554
Thr Trp Lys Lys Lys Val Lys Ser Leu Pro Asn Ile Leu Thr Asp Asp	
468 473 478 483	
cga ttt aaa gtt atg ttt gag aac cct gac ttc caa gta gat gaa gag	1602
Arg Phe Lys Val Met Phe Glu Asn Pro Asp Phe Gln Val Asp Glu Glu	
484 489 494 499	
agt gaa gaa ttt agg ctt ctg aat cca ctt gtt tca aaa att agt gaa	1650
Ser Glu Glu Phe Arg Leu Leu Asn Pro Leu Val Ser Lys Ile Ser Glu	
500 505 510 515	
aaa agg aag aag aaa cta aga ctc tta gag caa caa gaa ctt cgt gaa	1698
Lys Arg Lys Lys Lys Leu Arg Leu Leu Glu Gln Gln Glu Leu Arg Glu	
516 521 526 531	
aaa gaa gag gag gaa gag ccg gaa gga aaa cca agt gat gca gaa agt	1746
Lys Glu Glu Glu Glu Glu Pro Glu Gly Lys Pro Ser Asp Ala Glu Ser	
532 537 542 547	
tcg gag agt tca gat gat gaa aaa gcc tgg gtt gaa gag gtc agg aag	1794
Ser Glu Ser Ser Asp Asp Glu Lys Ala Trp Val Glu Glu Val Arg Lys	

548	553	558	563	
caa cgc aga ctc ctc	cag cag gag gaa aaa	gtg aag cgg cag gaa cga		1842
Gln Arg Arg Leu Leu	Gln Gln Glu Glu Lys	Val Lys Arg Gln Glu Arg		
564	569	574	579	
ctc aag gag gac cag	cag aca gtc cta aag	ccc cag ttt tat gag atc		1890
Leu Lys Glu Asp Gln	Gln Thr Val Leu Lys	Pro Gln Phe Tyr Glu Ile		
580	585	590	595	
aaa gca gga gaa gaa	ttt aga agc ttc aaa	gat tct gcc aca aag cag		1938
Lys Ala Gly Glu Glu	Phe Arg Ser Phe Lys	Asp Ser Ala Thr Lys Gln		
596	601	606	611	
aaa ctg atg aac aaa	acc ctt gaa gat cgt	ttg aaa att gaa gca aaa		1986
Lys Leu Met Asn Lys	Thr Leu Glu Asp Arg	Leu Lys Ile Glu Ala Lys		
612	617	622	627	
aat ggg aca ttg agt	gta tcc gac acc acc	gtt ggc agc aaa caa ttg		2034
Asn Gly Thr Leu Ser	Val Ser Asp Thr Thr	Val Gly Ser Lys Gln Leu		
628	633	638	643	
aca ttc acg tta aag	agg tct gaa cag cag	aag aag caa cag gag gct		2082
Thr Phe Thr Leu Lys	Arg Ser Glu Gln Gln	Lys Lys Gln Gln Glu Ala		
644	649	654	659	
gag aaa ctg cat cga	caa gaa agg aaa aga	ctc cgt cgt tcg gcc gga		2130
Glu Lys Leu His Arg	Gln Glu Arg Lys Arg	Leu Arg Arg Ser Ala Gly		
660	665	670	675	
cac ctg aag tca aga	cac aaa aga gga cgg	tcg ttt cat tga tttggga		2179
His Leu Lys Ser Arg	His Lys Arg Gly Arg	Ser Phe His *		
676	681	686		
agtggtccta cctgtgatta	gggaggggta cgtctcccc	aaactgatca tcgttaggg		2239
gttaaacaca gacgaggaaa	cacacgtttt taaagttcat	gtacgttcctt gtacacagag		2299
gtaaagattt gaaaacctgt	gccttgtggg ttggactttg	aagctggccc cgccgacggc		2359
caccgcacag cccaggggt	gtgcttgcca gtcgttgctc	cctggaaaca ttgtcctttc		2419
cccacggctt taatcatgaa	aaccaggctg gggttttttt	aatattgtga aatgtacacc		2479
atgaaatgaa aggtttatcc	tgtgccagaa accaaggttt	atcatgctct aggaactttt		2539
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<210> 1015

<211> 2521

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (106)..(2094)

<400> 1015

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gctggtggga aaggaccgga gacttgaaca gtgttggtgcg gcgcc      atg cag gtc      114
                               Met Gln Val
                               1

tcc agc ctc aat gag gtg aag att tac agc ctc agc tgc ggc aag tcc      162
Ser Ser Leu Asn Glu Val Lys Ile Tyr Ser Leu Ser Cys Gly Lys Ser
  4                               9                               14                               19

ctt cct gag tgg ctt tct gat agg aag aag aga gcg cta cag aag aaa      210
Leu Pro Glu Trp Leu Ser Asp Arg Lys Lys Arg Ala Leu Gln Lys Lys
  20                               25                               30                               35

gat gta gat gtc cgt agg aga att gaa ctt att cag gac ttt gaa atg      258
Asp Val Asp Val Arg Arg Arg Ile Glu Leu Ile Gln Asp Phe Glu Met
  36                               41                               46                               51

cct act gtg tgt acc act att aag gtg tca aaa gat gga cag tac att      306
Pro Thr Val Cys Thr Thr Ile Lys Val Ser Lys Asp Gly Gln Tyr Ile
  52                               57                               62                               67

tta gca act gtt gtc acc ttt gaa att ttg tct gat gac tac tca aag      354
Leu Ala Thr Val Val Thr Phe Glu Ile Leu Ser Asp Asp Tyr Ser Lys
  68                               73                               78                               83

att gtc ttc tta cat aat gat aga tac att gaa ttt cat tcg caa tca      402
Ile Val Phe Leu His Asn Asp Arg Tyr Ile Glu Phe His Ser Gln Ser
  84                               89                               94                               99

ggt ttt tac tac aaa acc aga ata cca aag ttt ggg aga gat ttc tct      450
Gly Phe Tyr Tyr Lys Thr Arg Ile Pro Lys Phe Gly Arg Asp Phe Ser
 100                               105                               110                               115

tac cac tat cca tcc tgt gac ttg tac ttt gtt ggt gca agt tct gaa      498
Tyr His Tyr Pro Ser Cys Asp Leu Tyr Phe Val Gly Ala Ser Ser Glu
 116                               121                               126                               131

ggt tat agg tta aac tta gaa caa gga cga tac ctg aat cct cta caa      546
Val Tyr Arg Leu Asn Leu Glu Gln Gly Arg Tyr Leu Asn Pro Leu Gln
 132                               137                               142                               147

act gat gct gcg gag aat aat gtt tgt gac ata aat tca gtg cat ggc      594
Thr Asp Ala Ala Glu Asn Asn Val Cys Asp Ile Asn Ser Val His Gly
 148                               153                               158                               163

ttg ttt gcc aca gga acc ata gag ggt aga gtg gag tgc tgg gac cca      642
Leu Phe Ala Thr Gly Thr Ile Glu Gly Arg Val Glu Cys Trp Asp Pro
 164                               169                               174                               179

aga act cga aac aga gtt ggc ctg tta gac tgc gcc tta aac agt gtc      690
Arg Thr Arg Asn Arg Val Gly Leu Leu Asp Cys Ala Leu Asn Ser Val
 180                               185                               190                               195
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aca gca gat tca gag ata aac agt tta cca aca atc tct gct ttg aaa	738
Thr Ala Asp Ser Glu Ile Asn Ser Leu Pro Thr Ile Ser Ala Leu Lys	
196 201 206 211	
ttt aat ggt gcc ttg acc atg gca gtt gga aca acc aca ggg cag gtt	786
Phe Asn Gly Ala Leu Thr Met Ala Val Gly Thr Thr Thr Gly Gln Val	
212 217 222 227	
tta tta tat gac ctt cga tct gat aag cca ttg cta gtt aaa gat cac	834
Leu Leu Tyr Asp Leu Arg Ser Asp Lys Pro Leu Leu Val Lys Asp His	
228 233 238 243	
cag tat ggg ctg ccc att aag tcc gtt cat ttc cag gat tca tta gat	882
Gln Tyr Gly Leu Pro Ile Lys Ser Val His Phe Gln Asp Ser Leu Asp	
244 249 254 259	
ctg att ttg tct gct gac tct cga att gtc aag atg tgg aat aag aac	930
Leu Ile Leu Ser Ala Asp Ser Arg Ile Val Lys Met Trp Asn Lys Asn	
260 265 270 275	
tcc gga aaa ata ttt act tcc ttg gag cca gag cat gac ctt aat gat	978
Ser Gly Lys Ile Phe Thr Ser Leu Glu Pro Glu His Asp Leu Asn Asp	
276 281 286 291	
gtt tgt ctc tac ccc aac tca ggc atg ctt ctg acg gcc aat gaa acc	1026
Val Cys Leu Tyr Pro Asn Ser Gly Met Leu Leu Thr Ala Asn Glu Thr	
292 297 302 307	
ccc aag atg ggc atc tat tac att cca gtt ttg ggt cct gct cct cgg	1074
Pro Lys Met Gly Ile Tyr Tyr Ile Pro Val Leu Gly Pro Ala Pro Arg	
308 313 318 323	
tgg tgt tcc ttc tta gac aac ttg acc gaa gaa tta gaa gag aat cca	1122
Trp Cys Ser Phe Leu Asp Asn Leu Thr Glu Glu Leu Glu Glu Asn Pro	
324 329 334 339	
gaa agc aca gtc tat gat gat tat aaa ttt gtc acc aag aaa gac ctt	1170
Glu Ser Thr Val Tyr Asp Asp Tyr Lys Phe Val Thr Lys Lys Asp Leu	
340 345 350 355	
gaa aat tta ggg ctc acc cac ctc att gga tct cct ttc ctc cgg gca	1218
Glu Asn Leu Gly Leu Thr His Leu Ile Gly Ser Pro Phe Leu Arg Ala	
356 361 366 371	
tat atg cat ggg ttt ttc atg gat ata aga ctc tat cac aag gtg aaa	1266
Tyr Met His Gly Phe Phe Met Asp Ile Arg Leu Tyr His Lys Val Lys	
372 377 382 387	
ctg atg gta aat cca ttt gct tat gaa gaa tat agg aaa gat aaa ata	1314
Leu Met Val Asn Pro Phe Ala Tyr Glu Glu Tyr Arg Lys Asp Lys Ile	
388 393 398 403	
cga cag aaa ata gaa gaa aca cgt gca cag aga gtc cag tta aag aaa	1362
Arg Gln Lys Ile Glu Glu Thr Arg Ala Gln Arg Val Gln Leu Lys Lys	
404 409 414 419	

ttg cca aaa gtt aac aaa gag ctg gca ctt aaa tta att gag gaa gaa Leu Pro Lys Val Asn Lys Glu Leu Ala Leu Lys Leu Ile Glu Glu Glu 420 425 430 435	1410
gag gag aag cag aaa tct aca tgg aaa aag aaa gtt aag agt ctt cct Glu Glu Lys Gln Lys Ser Thr Trp Lys Lys Lys Val Lys Ser Leu Pro 436 441 446 451	1458
aat att ctc acc gat gat cga ttt aaa gtt atg ttt gag aac cct gac Asn Ile Leu Thr Asp Asp Arg Phe Lys Val Met Phe Glu Asn Pro Asp 452 457 462 467	1506
ttc caa gta gat gaa gag agt gaa gaa ttt agg ctt ctg aat cca ctt Phe Gln Val Asp Glu Glu Ser Glu Glu Phe Arg Leu Leu Asn Pro Leu 468 473 478 483	1554
gtt tca aaa att agt gaa aaa agg aag aag aaa cta aga ctc tta gag Val Ser Lys Ile Ser Glu Lys Arg Lys Lys Lys Leu Arg Leu Leu Glu 484 489 494 499	1602
caa caa gaa ctt cgt gaa aaa gaa gag gag gaa gag ccg gaa gga aaa Gln Gln Glu Leu Arg Glu Lys Glu Glu Glu Glu Glu Pro Glu Gly Lys 500 505 510 515	1650
cca agt gat gca gaa agt tcg gag agt tca gat gat gaa aaa gcc tgg Pro Ser Asp Ala Glu Ser Ser Glu Ser Ser Asp Asp Glu Lys Ala Trp 516 521 526 531	1698
gtt gaa gag gtc agg aag caa cgc aga ctc ctc cag cag gag gaa aaa Val Glu Glu Val Arg Lys Gln Arg Arg Leu Leu Gln Gln Glu Glu Lys 532 537 542 547	1746
gtg aag cgg cag gaa cga ctc aag gag gac cag cag aca gtc cta aag Val Lys Arg Gln Glu Arg Leu Lys Glu Asp Gln Gln Thr Val Leu Lys 548 553 558 563	1794
ccc cag ttt tat gag atc aaa gca gga gaa gaa ttt aga agc ttc aaa Pro Gln Phe Tyr Glu Ile Lys Ala Gly Glu Glu Phe Arg Ser Phe Lys 564 569 574 579	1842
gat tct gcc aca aag cag aaa ctg atg aac aaa acc ctt gaa gat cgt Asp Ser Ala Thr Lys Gln Lys Leu Met Asn Lys Thr Leu Glu Asp Arg 580 585 590 595	1890
ttg aaa att gaa gca aaa aat ggg aca ttg agt gta tcc gac acc acc Leu Lys Ile Glu Ala Lys Asn Gly Thr Leu Ser Val Ser Asp Thr Thr 596 601 606 611	1938
gtt ggc agc aaa caa ttg aca ttc acg tta aag agg tct gaa cag cag Val Gly Ser Lys Gln Leu Thr Phe Thr Leu Lys Arg Ser Glu Gln Gln 612 617 622 627	1986
aag aag caa cag gag gct gag aaa ctg cat cga caa gaa agg aaa aga Lys Lys Gln Gln Glu Ala Glu Lys Leu His Arg Gln Glu Arg Lys Arg 628 633 638 643	2034
ctc cgt cgt tcg gcc gga cac ctg aag tca aga cac aaa aga gga cgg	2082

Leu Arg Arg Ser Ala Gly His Leu Lys Ser Arg His Lys Arg Gly Arg
644 649 654 659

tcg ttt cat tga ttt gggaagtggc cctacctgtg attagggagg ggtacgtctc 2137
Ser Phe His *
660

ccccaaactg atcatcgtta ggggtgttaaa cacagacgag gaaacacacg ttttttaaagt 2197

tcatgtacgt tcttgtacac agaggtaaag atttgaaaac ctgtgccttg tgggttggac 2257

tttgaagctg gccccgccga cggccaccgc acagccccag ggggtgtgctt gcgagtcgtt 2317

gctccctgga aacattgtcc tttccccacg gctttaatca tgaaaaccag gctgggggtt 2377

ttttaatatt gtgaaatgta caccatgaaa tgaaagggtt atcctgtgcc agaaaccaag 2437

gtttatcatg ctctaggaac ttttttctta cactgcctac cgccattcat gattaaacca 2497

tccagaaata ccaaaaaaaaa aaaa 2521

<210> 1016

<211> 1729

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (247)..(1371)

<400> 1016

ccggaattcc cgggtcgacg atttcgtgcc tggccaggt ggcccaggct gggggcatcg 60

cctcgaatga caccaccgc cctcaggttc tgccaatccc cgtgcccacc ggggtgggcgc 120

ggccgggaag ctctgcccc tccctgctgg tcggcgctac gcgtgacgtc ccgcgtgatg 180

gctgggaggg cccggcggcg acagcggagg cagagaggaa ggcggttctg agagcttcag 240

agagcg atg gaa agc aaa atg ggt gaa ttg cct tta gac atc aac atc 288

Met Glu Ser Lys Met Gly Glu Leu Pro Leu Asp Ile Asn Ile
1 5 10

cag gaa cct cgc tgg gac caa agt act ttc ctg ggc aga gcc cgg cac 336

Gln Glu Pro Arg Trp Asp Gln Ser Thr Phe Leu Gly Arg Ala Arg His
15 20 25 30

ttt ttc act gtt act gat cct cga aat ctg ctg ctg tcc ggg gca cag 384

Phe Phe Thr Val Thr Asp Pro Arg Asn Leu Leu Leu Ser Gly Ala Gln
31 36 41 46

ctg gaa gct tct cgg aac atc gtg cag aac tac agg gcc ggc gtg gtg 432

Leu Glu Ala Ser Arg Asn Ile Val Gln Asn Tyr Arg Ala Gly Val Val
47 52 57 62

acc cca ggg atc acc gag gac cag ctg tgg agg gcc aag tat gtg tat	480
Thr Pro Gly Ile Thr Glu Asp Gln Leu Trp Arg Ala Lys Tyr Val Tyr	
63 68 73 78	
gac tcc gcc ttc cat ccg gac aca ggg gag aag gtg gtc ctg att ggc	528
Asp Ser Ala Phe His Pro Asp Thr Gly Glu Lys Val Val Leu Ile Gly	
79 84 89 94	
cgc atg tca gcc cag gtg ccc atg aac atg acc atc act ggc tgc atg	576
Arg Met Ser Ala Gln Val Pro Met Asn Met Thr Ile Thr Gly Cys Met	
95 100 105 110	
ctc aca ttc tac agg aag acc cca acc gtg gtg ttc tgg cag tgg gtg	624
Leu Thr Phe Tyr Arg Lys Thr Pro Thr Val Val Phe Trp Gln Trp Val	
111 116 121 126	
aat cag tcc ttc aat gcc att gtt aac tac tcc aac cgc agt ggt gac	672
Asn Gln Ser Phe Asn Ala Ile Val Asn Tyr Ser Asn Arg Ser Gly Asp	
127 132 137 142	
act ccc atc act gtg agg cag ctg ggg aca gcc tat gtg agt gcc acc	720
Thr Pro Ile Thr Val Arg Gln Leu Gly Thr Ala Tyr Val Ser Ala Thr	
143 148 153 158	
act gga gct gtg gcc acg gcc ctg gga ctc aaa tcc ctc acc aag cac	768
Thr Gly Ala Val Ala Thr Ala Leu Gly Leu Lys Ser Leu Thr Lys His	
159 164 169 174	
ctg ccc ccc ttg gtc ggc aga ttt gtg ccc ttt gca gca gtg gca gct	816
Leu Pro Pro Leu Val Gly Arg Phe Val Pro Phe Ala Ala Val Ala Ala	
175 180 185 190	
gcc aac tgc atc aac atc ccc ctg atg agg cag aga gag ctg cag gtg	864
Ala Asn Cys Ile Asn Ile Pro Leu Met Arg Gln Arg Glu Leu Gln Val	
191 196 201 206	
ggc atc ccg gtg gct gat gag gca ggt cag agg ctt ggc tac tcg gtg	912
Gly Ile Pro Val Ala Asp Glu Ala Gly Gln Arg Leu Gly Tyr Ser Val	
207 212 217 222	
act gca gcc aag cag gga atc ttc cag gtg gtg att tca aga atc tgc	960
Thr Ala Ala Lys Gln Gly Ile Phe Gln Val Val Ile Ser Arg Ile Cys	
223 228 233 238	
atg gcg att cct gcc atg gcc atc cca cca ctg atc atg gac act ctg	1008
Met Ala Ile Pro Ala Met Ala Ile Pro Pro Leu Ile Met Asp Thr Leu	
239 244 249 254	
gag aag aaa gac ttc ctg aag gta ggc gac tgt acc tct ctt gtc ctg	1056
Glu Lys Lys Asp Phe Leu Lys Val Gly Asp Cys Thr Ser Leu Val Leu	
255 260 265 270	
gaa tgg gcg atg gct ggg aga agt gac cag gcc cca act ctc tct cca	1104
Glu Trp Ala Met Ala Gly Arg Ser Asp Gln Ala Pro Thr Leu Ser Pro	
271 276 281 286	


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gcc tcg cct gat tct cta aga ctt gcc agc cct tct cct gac ccc tgc      1152
Ala Ser Pro Asp Ser Leu Arg Leu Ala Ser Pro Ser Pro Asp Pro Cys
287                      292                      297                      302

acc gcc tcc tcc acc ttc gtt cat tca gca aga atg aac tgg gct ggg      1200
Thr Ala Ser Ser Thr Phe Val His Ser Ala Arg Met Asn Trp Ala Gly
303                      308                      313                      318

gtg aag gaa ctc tgc agg ggc agg agg aga gga caa agg aag gaa acc      1248
Val Lys Glu Leu Cys Arg Gly Arg Arg Arg Gly Gln Arg Lys Glu Thr
319                      324                      329                      334

aac ttc atc agt gtt act cca gtg gct tct gac aca cag aag ggg act      1296
Asn Phe Ile Ser Val Thr Pro Val Ala Ser Asp Thr Gln Lys Gly Thr
335                      340                      345                      350

gtc ata gtc atg ctt gat ctc atg ctc att ctt tta ccc cct agt gcc      1344
Val Ile Val Met Leu Asp Leu Met Leu Ile Leu Leu Pro Pro Ser Ala
351                      356                      361                      366

tcc ata ctg aga ggt aca cac ggg tga acacg cacacacaga catgaacagg      1396
Ser Ile Leu Arg Gly Thr His Gly *
367                      372

acacgaaagc aaagcacagg aacaagctct ggctcattca cagaatcatt tattcacaaa      1456

tgtattgagt gccatgcacc aggcattgtt tagggctgag gagatggcac tgaacacaat      1516

ggttatggcc cctgtcctca tgaagtttat agtctgatgc agaaaccaat aaacaaggag      1576

gcacccaata aatacattct tagaaagtgt aatatgtgct ttgtaggaaa gcaatggggg      1636

tagtgtaatt gagattcatg ggggagagct gtttagatag gatgatcaga gaaggggtgt      1696

attgcggcgc ctctagagga tccaagctta cgt                                1729

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<210> 1017
<211> 1970
<212> DNA
<213> Homo sapiens

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<220>
<221> CDS
<222> (194) .. (1402)

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<220>
<221> misc_feature
<222> (1) ... (1970)
<223> n = a,t,c or g

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<400> 1017
gctgccgcgg tccttaattc ccgggtcgac gatttcgtct ttctgcgggc ctttccggta      60

cttgagcggg gttcagagcg tggccagttc tcgtctatct ggctgccttt agggagcggg      120

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gcctagcggtt ggccaatagt tggctgtcga aagtgccggc ccccgcgccg gcgcctgcag 180

cagtcgggtg gga atg ctc aag atg gcg tgc ttg ttg gag acc cca atc 229
Met Leu Lys Met Ala Cys Leu Leu Glu Thr Pro Ile
1 5 10

cgc atg agc gtc ctt tcg gaa gta aca gct agc agt cgc cac tat gtt 277
Arg Met Ser Val Leu Ser Glu Val Thr Ala Ser Ser Arg His Tyr Val
13 18 23 28

gac agg cta ttt gac cct gat ccc cag aaa gtt cta caa ggt gtc ata 325
Asp Arg Leu Phe Asp Pro Asp Pro Gln Lys Val Leu Gln Gly Val Ile
29 34 39 44

gac atg aaa aat gct gta att gga aac aac aag cag aaa gcc aat ctc 373
Asp Met Lys Asn Ala Val Ile Gly Asn Asn Lys Gln Lys Ala Asn Leu
45 50 55 60

att gtt tta gga gct gtt cca aga ttg ttg tac ttg ctt cag caa gaa 421
Ile Val Leu Gly Ala Val Pro Arg Leu Leu Tyr Leu Leu Gln Gln Glu
61 66 71 76

acc tca agc aca gag ctg aaa act gaa tgt gca gtg gtg ttg gga agt 469
Thr Ser Ser Thr Glu Leu Lys Thr Glu Cys Ala Val Val Leu Gly Ser
77 82 87 92

ctt gct atg ggt act gaa aac aat gtc aag tct cta ctg gac tgc cat 517
Leu Ala Met Gly Thr Glu Asn Asn Val Lys Ser Leu Leu Asp Cys His
93 98 103 108

att atc cct gcc tta ttg caa gga cta ctg tcc cca gac ctg aag ttt 565
Ile Ile Pro Ala Leu Leu Gln Gly Leu Leu Ser Pro Asp Leu Lys Phe
109 114 119 124

att gaa gct tgc ctc cga tgc ctg cgt acc atc ttc acc agt cct gtc 613
Ile Glu Ala Cys Leu Arg Cys Leu Arg Thr Ile Phe Thr Ser Pro Val
125 130 135 140

act cca gag gag cta ctg tat aca gat gcc aca gtg ata cca cac ctc 661
Thr Pro Glu Glu Leu Leu Tyr Thr Asp Ala Thr Val Ile Pro His Leu
141 146 151 156

atg gca ctg ctt agc agg tcc cgc tat acc cag gag tac atc tgt cag 709
Met Ala Leu Leu Ser Arg Ser Arg Tyr Thr Gln Glu Tyr Ile Cys Gln
157 162 167 172

atc ttc tca cac tgc tgt aaa ggg cca gat cat caa aca att tta ttt 757
Ile Phe Ser His Cys Cys Lys Gly Pro Asp His Gln Thr Ile Leu Phe
173 178 183 188

aac cac ggt gca gtt cag aat att gct cac cta cta acc tca ctg tcc 805
Asn His Gly Ala Val Gln Asn Ile Ala His Leu Leu Thr Ser Leu Ser
189 194 199 204

tac aaa gtt cga atg caa gca ctg aaa tgt ttc tca gtt tta gct ttt 853
Tyr Lys Val Arg Met Gln Ala Leu Lys Cys Phe Ser Val Leu Ala Phe

205	210	215	220	
gaa aac ccc cag gta tgc atg acc ctg gta aat gtt ttg gtt gat gga				901
Glu Asn Pro Gln Val Ser Met Thr Leu Val Asn Val Leu Val Asp Gly				
221	226	231	236	
gaa ttg tta cca cag att ttt gtg aag atg tta cag agg gat aag cct				949
Glu Leu Leu Pro Gln Ile Phe Val Lys Met Leu Gln Arg Asp Lys Pro				
237	242	247	252	
att gag atg cag ctg aca tca gca aaa tgt tta act tac atg tgt aga				997
Ile Glu Met Gln Leu Thr Ser Ala Lys Cys Leu Thr Tyr Met Cys Arg				
253	258	263	268	
gct gga gca att cgg aca gat gat aac tgt att gta tta aag aca tta				1045
Ala Gly Ala Ile Arg Thr Asp Asp Asn Cys Ile Val Leu Lys Thr Leu				
269	274	279	284	
cct tgt ttg gtt cga atg tgc agt aag gag aga tta cta gag gag aga				1093
Pro Cys Leu Val Arg Met Cys Ser Lys Glu Arg Leu Leu Glu Glu Arg				
285	290	295	300	
gtt gaa gga gct gag aca ctt gcc tat ctg att gaa cca gat gtt gag				1141
Val Glu Gly Ala Glu Thr Leu Ala Tyr Leu Ile Glu Pro Asp Val Glu				
301	306	311	316	
cta cag aga atc gct agc ata act gat cac ctg att gcc atg ctt gct				1189
Leu Gln Arg Ile Ala Ser Ile Thr Asp His Leu Ile Ala Met Leu Ala				
317	322	327	332	
gat tat ttc aag tat ccc agc tca gtg agt gcc atc act gat att aaa				1237
Asp Tyr Phe Lys Tyr Pro Ser Ser Val Ser Ala Ile Thr Asp Ile Lys				
333	338	343	348	
agg ctt gat cat gat tta aaa cat gct cac gaa ctg cgc cag gct gca				1285
Arg Leu Asp His Asp Leu Lys His Ala His Glu Leu Arg Gln Ala Ala				
349	354	359	364	
ttc aag ctg tat gcc tct ctt gga gca aat gat gaa gac atc cgg aag				1333
Phe Lys Leu Tyr Ala Ser Leu Gly Ala Asn Asp Glu Asp Ile Arg Lys				
365	370	375	380	
aag gtg agt ctg gga gag ggg cgt ccc cca gtc ctg aca gcc agc agg				1381
Lys Val Ser Leu Gly Glu Gly Arg Pro Pro Val Leu Thr Ala Ser Arg				
381	386	391	396	
cag gga gtg acg tca acc tga aa gtcgtggtga agagcactaa cagtgactgt				1434
Gln Gly Val Thr Ser Thr *				
397	402			
ttgaatataa taaagcagag tgactaaagg cataattgaa gaatgaatgg gacccggatt				1494
tggtgtgtgtg tttgtttgtt tttagaacat agagtggcat ggccgtgctg gaatgacaaa				1554
taactggcgt gctttttttt tgtgtcatta atatgaatta ttatgttgca cattttttgca				1614
tgtgtttctga taaaaatcaa ttctagcact gtgaagcttc agacaccttg aaagtcctaa				1674

cattagaatt gtaaattgta tttatggaaa taccttccaa tgctattgag aaattcaaatt 1734
ctctattgta tattgttctt tgatatgtgg cttagtttta tgttttgatt ttttttgcta 1794
ctgtgcaagt ttaatgtgaa taaaatcttt gtggaatgat gattttatgt ttaggtgagt 1854
gggtcatctg gaattttccc agtccccca ggaaaatgta nggcacnggg tatagcacc 1914
cttatgggta cctaaagccc cggncctaac cactggaacn ccaggttcnt ggatgg 1970

<210> 1018
<211> 1432
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (854) .. (1330)

<220>
<221> misc_feature
<222> (1) ... (1432)
<223> n = a,t,c or 'g'

<400> 1018
cacgagggct gtcttgagtg gaccttga gtaaaggaaa ggtgctttga agcacattca 60
gccatcagcc ctgtgggatg gcagccactg atttgtccta tgggaaccag totgccttca 120
agaaaagaca gaagtagaaa ggggtggtggc tgactgtctg acaaattggt atcaggtatg 180
caggaagtat atccttctcc aaaatatcat acttgcattca ccaggtagac acatttcctt 240
ctacacagaa ttatcttcag agcttcttaa agcaaataaa gcctgcttca aggactgagt 300
ccctagtcca attcccggaa ggagtggagc ctgtcatatt ggtgaggggt tgccttgaat 360
gtcatcccag tatttcaata ttgattaatt agtcttccct catggtccca actgcatagt 420
ttttattttg ttgagtgttc tgacacatgg taaggacat gaaagtatcc tttgagataa 480
tctttccatt catcagtgtt tatctagcat ctgctcaaga gtgtgctgca gtggagggaa 540
atcagatgac ctcccagtct gggtgtgtta catacaatca tgtgtaagaa gtgccattca 600
agccgtgtca ctggagggga ctgacagtga gtgagtgtgg ataaagagga cctcctgggg 660
tgggcaatgt gagccctcag actctgtagg tattgcattt tgcagtgaac actggtagac 720
atgttttgtg gctcaagcca gcatgtgtgt gatggtttag gattcagtga cttttgatga 780
tctggctgtg gacttcaccc caaaagaatg gactttactg gacccaactc agagaaacct 840

ctacagagat gtg	atg ctg gag aac tac aag aat ttg gcc aca gta gga	889
	Met Leu Glu Asn Tyr Lys Asn Leu Ala Thr Val Gly	
	1 5 10	
tat cag ctc ttc aaa ccc agt ctg atc tct tgg ctg gaa caa gaa gag	937	
Tyr Gln Leu Phe Lys Pro Ser Leu Ile Ser Trp Leu Glu Gln Glu Glu		
13 18 23 28		
tct agg aca gtg cag aga ggt gat ttc caa gct tca gaa tgg aaa gtg	985	
Ser Arg Thr Val Gln Arg Gly Asp Phe Gln Ala Ser Glu Trp Lys Val		
29 34 39 44		
caa ctt aaa acc aaa gag tta gcc ctt cag cag gat gtt ttg ggg gag	1033	
Gln Leu Lys Thr Lys Glu Leu Ala Leu Gln Gln Asp Val Leu Gly Glu		
45 50 55 60		
cca acc tcc agt ggg att caa atg ata gga agc cac aac gga ggg gag	1081	
Pro Thr Ser Ser Gly Ile Gln Met Ile Gly Ser His Asn Gly Gly Glu		
61 66 71 76		
gtc agt gat gtt aag caa tgt gga gat gtc tcc agt gaa cac tca tgc	1129	
Val Ser Asp Val Lys Gln Cys Gly Asp Val Ser Ser Glu His Ser Cys		
77 82 87 92		
ctt aag aca cat gtg aga act caa aat agt gag aac aca ttt gag tgt	1177	
Leu Lys Thr His Val Arg Thr Gln Asn Ser Glu Asn Thr Phe Glu Cys		
93 98 103 108		
tat ctg tat gga gta gac ttc ctt act ctg cac aag aaa acc tct act	1225	
Tyr Leu Tyr Gly Val Asp Phe Leu Thr Leu His Lys Lys Thr Ser Thr		
109 114 119 124		
gga gag caa cgt tct gta ttt agt cag tgt gga aaa gcc ttc agc ctg	1273	
Gly Glu Gln Arg Ser Val Phe Ser Gln Cys Gly Lys Ala Phe Ser Leu		
125 130 135 140		
aac cca gat gtt gtt tgc cag aag aac cgt tgc aca agg aag aag aaa	1321	
Asn Pro Asp Val Val Cys Gln Lys Asn Arg Cys Thr Arg Lys Lys Lys		
141 146 151 156		
gct ttt tga ttgcagt tgactctggg gaaatccttc cattaatcca ttcacacctt	1377	
Ala Phe *		
157		
ccagggacat ttaagaactc cacnatggga gaaagtctcc catggaaatg ggaag	1432	

<210> 1019

<211> 1477

<212> DNA

<213> Homo sapiens,

<220> /

<221> CDS

<222> (67)..(753)

<220>
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 <222> (1)...(1477)
 <223> n = a,t,c or g

<400> 1019

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agaaca atg acc agg tat tgg gag ggc tgg tct caa cac att tca ctc 108
 Met Thr Arg Tyr Trp Glu Gly Trp Ser Gln His Ile Ser Leu
 1 5 10

ttc agg gag cca gtt gat aat ctg agt cct gag gag³ cgt gat gcc cgc 156
 Phe Arg Glu Pro Val Asp Asn Leu Ser Pro Glu Glu Arg Asp Ala Arg
 15 20 25 30

aca gtt ttc tgt atg cag tta gct gcc cga att cgg cct cga gat ctg 204
 Thr Val Phe Cys Met Gln Leu Ala Ala Arg Ile Arg Pro Arg Asp Leu
 31 36 41 46

gag gac ttt ttc tct gct gta ggc aag gtt cgc gat gta cgt atc att 252
 Glu Asp Phe Phe Ser Ala Val Gly Lys Val Arg Asp Val Arg Ile Ile
 47 52 57 62

tca gat cgg aac tca cgt cgt tct aag ggc att gcc tac gtg gaa ttc 300
 Ser Asp Arg Asn Ser Arg Arg Ser Lys Gly Ile Ala Tyr Val Glu Phe
 63 68 73 78

tgt gaa atc cag tct gtg cca ctg gcc att ggg ctg act ggg cag cgg 348
 Cys Glu Ile Gln Ser Val Pro Leu Ala Ile Gly Leu Thr Gly Gln Arg
 79 84 89 94

ttg ctg gga gtg cct atc att gta cag gct tca cag gca gag aaa aac 396
 Leu Leu Gly Val Pro Ile Ile Val Gln Ala Ser Gln Ala Glu Lys Asn
 95 100 105 110

cga ctg gca gcc atg gcc aac aac ctg caa aag ggc aat ggt gga cca 444
 Arg Leu Ala Ala Met Ala Asn Asn Leu Gln Lys Gly Asn Gly Gly Pro
 111 116 121 126

atg cgc ctc tat gtg ggt tcc ctg cac ttc aat atc act gaa gac atg 492
 Met Arg Leu Tyr Val Gly Ser Leu His Phe Asn Ile Thr Glu Asp Met
 127 132 137 142

ctc cgg ggc atc ttt gag ccc ttt ggt aaa att gat aat att gtc ctg 540
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Met Ala Ser	

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Pro Ser Asp Asn Ser Gly Gln Val Ser Pro Pro Glu Ser Pro Thr Val	
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Gln Ser Trp His Thr Glu Ser Leu Pro Val Ser Leu Gly Pro Glu Ser	
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Pro Ala Thr Ser Leu Phe Val Glu Leu Asp Glu Glu Glu Val Lys Ala	
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Ala Thr Thr Glu Pro Thr Glu Val Glu Glu Val Val Pro Ala Leu Glu	
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ccc aca gaa acg ctg ctg agt gag aag gag ata aac gca agg gaa gag	1424
Pro Thr Glu Thr Leu Leu Ser Glu Lys Glu Ile Asn Ala Arg Glu Glu	
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Met Pro Leu Ser Glu Gly Lys Ser Ile Leu Leu Phe Gly Gly Ala Ala	

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Lys Lys *				
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Arg Thr Leu Ser Leu Glu Pro Glu Glu Ser Leu Asp Val Ser Glu Thr	
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Glu Gly Glu Gln Ile Leu Lys Val Glu Ser Ser Ala Leu Glu Val Asp	
172 177 182 187	
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Gln Asp Val Leu Asp Glu Glu Ser Arg Ala Asp Asn Lys Pro Cys Leu	
188 193 198 203	
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Ser Phe Ser Glu Pro Glu Asn Ala Val Ser Glu Ile Glu Val Ala Glu	
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Val Ala Tyr Asp Ala Glu Glu Asp *	
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Gly Pro Leu Gly Ser Trp Gln Gln Trp Arg Arg Cys Leu Ser Ala Arg
  6                               11                               16       21

gat ggg tcc agg atg tta ctc ctt ctt ctt ttg ttg ggg tct ggg cag      151
Asp Gly Ser Arg Met Leu Leu Leu Leu Leu Leu Leu Gly Ser Gly Gln
 22                               27                               32       37

ggg cca cag caa gtc ggg gcg ggt caa acg ttc gag tac ttg aaa cgg      199
Gly Pro Gln Gln Val Gly Ala Gly Gln Thr Phe Glu Tyr Leu Lys Arg
 38                               43                               48       53

gag cac tcg ctg tcg aag ccc tac cag ggt gtg ggc aca ggc agt tcc      247
Glu His Ser Leu Ser Lys Pro Tyr Gln Gly Val Gly Thr Gly Ser Ser
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tca ctg tgg aat ctg atg ggc aat gcc atg gtg atg acc cag tat atc      295
Ser Leu Trp Asn Leu Met Gly Asn Ala Met Val Met Thr Gln Tyr Ile
 70                               75                               80       85

cgc ctt acc cca gat atg caa agt aaa cag ggt gcc ttg tgg aac cgg      343
Arg Leu Thr Pro Asp Met Gln Ser Lys Gln Gly Ala Leu Trp Asn Arg
 86                               91                               96      101

gtg cca tgt ttc ctg aga gac tgg gag ttg cag gtg cac ttc aaa atc      391
Val Pro Cys Phe Leu Arg Asp Trp Glu Leu Gln Val His Phe Lys Ile
102                               107                               112      117

cat gga caa gga aag aag aat ctg cat ggg gat ggc ttg gca atc tgg      439
His Gly Gln Gly Lys Lys Asn Leu His Gly Asp Gly Leu Ala Ile Trp
118                               123                               128      133

tac aca aag gat cgg atg cag cca ggg cct gtg ttt gga aac atg gac      487
Tyr Thr Lys Asp Arg Met Gln Pro Gly Pro Val Phe Gly Asn Met Asp
134                               139                               144      149

aaa ttt gtg ggg ctg gga gta ttt gta gac acc tac ccc aat gag gag      535
Lys Phe Val Gly Leu Gly Val Phe Val Asp Thr Tyr Pro Asn Glu Glu
150                               155                               160      165

aag cag caa gag cgg gta ttc ccc tac atc tca gcc atg gtg aac aac      583
Lys Gln Gln Glu Arg Val Phe Pro Tyr Ile Ser Ala Met Val Asn Asn
166                               171                               176      181

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Gly Ser Leu Ser Tyr Asp His Glu Arg Asp Gly Arg Pro Thr Glu Leu
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198	203	208	213	
gtg att cgc tac gtc aag agg cat ttg acg ata atg atg gat att gat				727
Val Ile Arg Tyr Val Lys Arg His Leu Thr Ile Met Met Asp Ile Asp				
214	219	224	229	
ggc aag cat gag tgg agg gac tgc att gaa gtg ccc gga gtc cgc ctg				775
Gly Lys His Glu Trp Arg Asp Cys Ile Glu Val Pro Gly Val Arg Leu				
230	235	240	245	
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Pro Arg Gly Tyr Tyr Phe Gly Thr Ser Ser Ile Thr Gly Asp Leu Ser				
246	251	256	261	
gat aat cat gat gtc att tcc ttg aag ttg ttt gaa ctg aca gtg gag				871
Asp Asn His Asp Val Ile Ser Leu Lys Leu Phe Glu Leu Thr Val Glu				
262	267	272	277	
aga acc cca gaa gag gaa aag ctc cat cga gat gtg ttc ttg ccc tca				919
Arg Thr Pro Glu Glu Glu Lys Leu His Arg Asp Val Phe Leu Pro Ser				
278	283	288	293	
gtg gac aat atg aag ctg cct gag atg aca gct cca ctg ccg ccc ctg				967
Val Asp Asn Met Lys Leu Pro Glu Met Thr Ala Pro Leu Pro Pro Leu				
294	299	304	309	
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Ser Gly Leu Ala Leu Phe Leu Ile Val Phe Phe Ser Leu Val Phe Ser				
310	315	320	325	
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Val Phe Ala Ile Val Ile Gly Ile Ile Leu Tyr Asn Lys Trp Gln Glu				
326	331	336	341	
cag agc cga aag cgc ttc tac tg agccctcctg ctgccaccac ttttgtgact				1116
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atcccagttg aatgctgtct tccaagaaca gaagaaa atg atc cag gcc cag gaa 175
Met Ile Gln Ala Gln Glu
1

tcc ata aca ctg gag gat gtg gct gtg gac ttc act tgg gag gag tgg 223
Ser Ile Thr Leu Glu Asp Val Ala Val Asp Phe Thr Trp Glu Glu Trp
7 12 17 22

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Gln Leu Leu Gly Ala Ala Gln Lys Asp Leu Tyr Arg Asp Val Met Leu
23 28 33 38

gag aac tac agc aac ctg gtg gca gtg ggg tat caa gcc agc aaa ccg 319
Glu Asn Tyr Ser Asn Leu Val Ala Val Gly Tyr Gln Ala Ser Lys Pro
39 44 49 54

gat gca ctc ttc aag ttg gaa caa gga gaa caa ctg tgg aca att gaa 367
Asp Ala Leu Phe Lys Leu Glu Gln Gly Glu Gln Leu Trp Thr Ile Glu
55 60 65 70

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Asp Gly Ile His Ser Gly Ala Cys Ser Glu Ser Cys Ser Val Pro Arg
71 76 81 86

ctg gag cgc aat ggt gtg aac ttg gct cac cgc aac ctc cac ctc ctg 463
Leu Glu Arg Asn Gly Val Asn Leu Ala His Arg Asn Leu His Leu Leu
87 92 97 102

gat tca agc gat tct tgt gcc tat ccc caa cac cag cac cat acc tgg 511
Asp Ser Ser Asp Ser Cys Ala Tyr Pro Gln His Gln His His Thr Trp
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cac acg gtg atc att caa cat atg gaa agt tga tcatgtgc tggagcgctt 562
His Thr Val Ile Ile Gln His Met Glu Ser *
119 124 129

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ccacgtcatg aggaagtgcc ggcccactga agccgtgggg acgcgcccag cggagctaata 120
cagattacct ggctggtgtt tgcttgttct ggagtgatct tctgactgga aaagaact 178
atg tca tgg atc aag gaa gga gag ctg tca ctt tgg gag cgg ttc tgt 226
Met Ser Trp Ile Lys Glu Gly Glu Leu Ser Leu Trp Glu Arg Phe Cys
1 5 10 15
gcc aac atc ata aag gca ggc cca atg ccg aaa cac att gca ttc ata 274
Ala Asn Ile Ile Lys Ala Gly Pro Met Pro Lys His Ile Ala Phe Ile
17 22 27 32
atg gac ggg aac cgt cgc tat gcc aag aag tgc cag gtg gag cgg cag 322
Met Asp Gly Asn Arg Arg Tyr Ala Lys Lys Cys Gln Val Glu Arg Gln
33 38 43 48
gaa ggc cac tca cag ggc ttc aac aag cta gct gag act ctg cgg tgg 370
Glu Gly His Ser Gln Gly Phe Asn Lys Leu Ala Glu Thr Leu Arg Trp
49 54 59 64
tgt ttg aac ctg ggc atc cta gag gtg aca gtc tac gca ttc agc att 418
Cys Leu Asn Leu Gly Ile Leu Glu Val Thr Val Tyr Ala Phe Ser Ile
65 70 75 80
gag aac ttc aaa cgc tcc aag agt gag gta gac ggg ctt atg gat ctg 466
Glu Asn Phe Lys Arg Ser Lys Ser Glu Val Asp Gly Leu Met Asp Leu
81 86 91 96
gcc cgg cag aag ttc agc cgc ttg atg gaa gaa aag gag aaa ctg cag 514
Ala Arg Gln Lys Phe Ser Arg Leu Met Glu Glu Lys Glu Lys Leu Gln
97 102 107 112
aag cat ggg gtg tgt atc cgg gtc ctg ggc gat ctg cac ttg ttg ccc 562
Lys His Gly Val Cys Ile Arg Val Leu Gly Asp Leu His Leu Leu Pro
113 118 123 128
ttg gat ctc cag gag ctg att gca caa gct gta cag gcc acg aag aac 610
Leu Asp Leu Gln Glu Leu Ile Ala Gln Ala Val Gln Ala Thr Lys Asn
129 134 139 144
tac aac aag tgt ttc ctg aat gtc tgt ttt gca tac aca tcc cgt cat 658
Tyr Asn Lys Cys Phe Leu Asn Val Cys Phe Ala Tyr Thr Ser Arg His
145 150 155 160
gag atc agc aat gct gtg aga gag atg gcc tgg ggg gtg gag caa ggc 706
Glu Ile Ser Asn Ala Val Arg Glu Met Ala Trp Gly Val Glu Gln Gly
161 166 171 176
ctg ttg gat ccc agt gat atc tct gag tct ctg ctt gat aag tgc ctc 754
Leu Leu Asp Pro Ser Asp Ile Ser Glu Ser Leu Leu Asp Lys Cys Leu
177 182 187 192
tat acc aac cgc tct cct cat cct gac atc ttg ata cgg act tct gga 802
Tyr Thr Asn Arg Ser Pro His Pro Asp Ile Leu Ile Arg Thr Ser Gly
193 198 203 208

gaa gtg cgg ctg agt gac ttc ttg cta tgg cag acc tct cac tcc tgc	850
Glu Val Arg Leu Ser Asp Phe Leu Leu Trp Gln Thr Ser His Ser Cys	
209 214 219 224	
ctg gtg ttc caa ccc gtt ctg tgg cca gag tat aca ttt tgg aac ctc	898
Leu Val Phe Gln Pro Val Leu Trp Pro Glu Tyr Thr Phe Trp Asn Leu	
225 230 235 240	
ttc gag gcc atc ctg cag ttc cag atg aac cat agc gtg ctt cag aag	946
Phe Glu Ala Ile Leu Gln Phe Gln Met Asn His Ser Val Leu Gln Lys	
241 246 251 256	
gcc cga gac atg tat gca gag gag cgg aag agg cag cag ctg gag agg	994
Ala Arg Asp Met Tyr Ala Glu Glu Arg Lys Arg Gln Gln Leu Glu Arg	
257 262 267 272	
gac cag gct aca gtg aca gag cag ctg ctg cga gag ggg ctc caa gcc	1042
Asp Gln Ala Thr Val Thr Glu Gln Leu Leu Arg Glu Gly Leu Gln Ala	
273 278 283 288	
agt ggg gac gcc cag ctc cga agg aca cgc ttg cac aaa ctc tcg gcc	1090
Ser Gly Asp Ala Gln Leu Arg Arg Thr Arg Leu His Lys Leu Ser Ala	
289 294 299 304	
aga cgg gaa gag cga gtc caa ggc ttc ctg cag gcc ttg gaa ctc aag	1138
Arg Arg Glu Glu Arg Val Gln Gly Phe Leu Gln Ala Leu Glu Leu Lys	
305 310 315 320	
cga gct gac tgg ctg gcc cgt ctg ggc act gca tca gcc tga atgaggc	1187
Arg Ala Asp Trp Leu Ala Arg Leu Gly Thr Ala Ser Ala *	
321 326 331	
tggccacctg ccactttgcc ctgccctctg cctccagggc tccactcccc ttccttttct	1247
tgggtgaaagg cacctccttt cctgataatg aatgggtgttc cctttgcttg gctggggagc	1307
ccccaggcc aggtttgctg gccataaata cctttgggct gcctgggaca ggctccttag	1367
gaggattgag ggtgaaagtt tccccgagt accctaaacc taggtttggt cccaatagg	1427
gtttggaaag caaagggccc caactcttca ccaaaaaaaaa aaaa	1471

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 <211> 1369
 <212> DNA
 <213> Homo sapiens

<220>
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ccacgtcatg aggaagtgcc ggcccactga agccgtgggg acgcgcccag cggagctaata	120
cagattacct ggctgggtgtt tgcttgttct ggagtgatct tctgactgga aaagaact	178
atg tca tgg atc aag gaa gga gag ctg tca ctt tgg gag cgg ttc tgt	226
Met Ser Trp Ile Lys Glu Gly Glu Leu Ser Leu Trp Glu Arg Phe Cys	
1 5 10 15	
gcc aac atc ata aag gca ggc cca atg ccg aaa cac att gca ttc ata	274
Ala Asn Ile Ile Lys Ala Gly Pro Met Pro Lys His Ile Ala Phe Ile	
17 22 27 32	
atg gac ggg aac cgt cgc tat gcc aag aag tgc cag gtg gag cgg cag	322
Met Asp Gly Asn Arg Arg Tyr Ala Lys Lys Cys Gln Val Glu Arg Gln	
33 38 43 48	
gaa ggc cac tca cag ggc ttc aac aag cta gct gag act ctg cgg tgg	370
Glu Gly His Ser Gln Gly Phe Asn Lys Leu Ala Glu Thr Leu Arg Trp	
49 54 59 64	
tgt ttg aac ctg ggc atc cta gag gtg aca gtc tac gca ttc agc att	418
Cys Leu Asn Leu Gly Ile Leu Glu Val Thr Val Tyr Ala Phe Ser Ile	
65 70 75 80	
gag aac ttc aaa cgc tcc aag agt gag gta gac ggg ctt atg gat ctg	466
Glu Asn Phe Lys Arg Ser Lys Ser Glu Val Asp Gly Leu Met Asp Leu	
81 86 91 96	
gcc cgg cag aag ttc agc cgc ttg atg gaa gaa aag gag aaa ctg cag	514
Ala Arg Gln Lys Phe Ser Arg Leu Met Glu Glu Lys Glu Lys Leu Gln	
97 102 107 112	
aag cat ggg gtg tgt atc cgg gtc ctg ggc gat ctg cac ttg ttg ccc	562
Lys His Gly Val Cys Ile Arg Val Leu Gly Asp Leu His Leu Leu Pro	
113 118 123 128	
ttg gat ctc cag gag ctg att gca caa gct gta cag gcc acg aag aac	610
Leu Asp Leu Gln Glu Leu Ile Ala Gln Ala Val Gln Ala Thr Lys Asn	
129 134 139 144	
tac aac aat gat atc tct gag tct ctg ctt gat aag tgc ctc tat acc	658
Tyr Asn Asn Asp Ile Ser Glu Ser Leu Leu Asp Lys Cys Leu Tyr Thr	
145 150 155 160	
aac cgc tct cct cat cct gac atc ttg ata cgg act tct gga gaa gtg	706
Asn Arg Ser Pro His Pro Asp Ile Leu Ile Arg Thr Ser Gly Glu Val	
161 166 171 176	
cgg ctg agt gac ttc ttg cta tgg cag acc tct cac tcc tgc ctg gtg	754
Arg Leu Ser Asp Phe Leu Leu Trp Gln Thr Ser His Ser Cys Leu Val	
177 182 187 192	
ttc caa ccc gtt ctg tgg cca gag tat aca ttt tgg aac ctc ttc gag	802
Phe Gln Pro Val Leu Trp Pro Glu Tyr Thr Phe Trp Asn Leu Phe Glu	
193 198 203 208	
gcc atc ctg cag ttc cag atg aac cat agc gtg ctt cag aag gcc cga	850

Ala Ile Leu Gln Phe Gln Met Asn His Ser Val Leu Gln Lys Ala Arg	
209 214 219 224	
gac atg tat gca gag gag cgg aag agg cag cag ctg gag agg gac cag	898
Asp Met Tyr Ala Glu Glu Arg Lys Arg Gln Gln Leu Glu Arg Asp Gln	
225 230 235 240	
gct aca gtg aca gag cag ctg ctg cga gag ggg ctc caa gcc agt ggg	946
Ala Thr Val Thr Glu Gln Leu Leu Arg Glu Gly Leu Gln Ala Ser Gly	
241 246 251 256	
gac gcc cag ctc cga agg aca cgc ttg cac aaa ctc tcg gcc aga cgg	994
Asp Ala Gln Leu Arg Arg Thr Arg Leu His Lys Leu Ser Ala Arg Arg	
257 262 267 272	
gaa gag cga gtc caa ggc ttc ctg cag gcc ttg gaa ctc aag cga gct	1042
Glu Glu Arg Val Gln Gly Phe Leu Gln Ala Leu Glu Leu Lys Arg Ala	
273 278 283 288	
gac tgg ctg gcc cgt ctg ggc act gca tca gcc tga atga ggctggccac	1092
Asp Trp Leu Ala Arg Leu Gly Thr Ala Ser Ala *	
289 294 299	
ctgccacttt gccctgccct ctgcctccag ggctccactc cccttccttt tcttggtgaa	1152
aggcacctcc tttcctgata atgaatggtg ttccctttgc ttggctgggg agccccccag	1212
gccaggtttg ctggccataa ataccttttg gctgcctggg acaggctcct taggaggatt	1272
gagggtgaaa gtttcccccg agtaccctaa acctaggttt ggtccccaat agggtttgga	1332
aagcaaaggg cccaactct tcaccaaaaa aaaaaaa	1369

<210> 1026
 <211> 1380
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> CDS
 <222> (148) .. (1131)

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ccgctctgcc acgctggtcc tggcctacct catgctgcac cagcggctgt ccctgcgcca	120
ggcgggtgatc accgtgaggc agcaccg atg ggt ctt ccc caa ccg agg ctt	171
Met Gly Leu Pro Gln Pro Arg Leu	
1 1 5	
cct gca cca gct ctg cag gct gga cca gca act gcg ggg tgc cgg cca	219
Pro Ala Pro Ala Leu Gln Ala Gly Pro Ala Thr Ala Gly Cys Arg Pro	
9 14 19 24	

gag ctg agg ggc cag agc tgg tcc tta ctc cct gcc atg ggg ctc tgc	267
Glu Leu Arg Gly Gln Ser Trp Ser Leu Leu Pro Ala Met Gly Leu Cys	
25 30 35 40	
cac ttt gcc acc ctg gca ctg atc ctg ctg gtg ctg ctg gag gct ctg	315
His Phe Ala Thr Leu Ala Leu Ile Leu Leu Val Leu Leu Glu Ala Leu	
41 46 51 56	
gcc cag gcg gac aca cag aag atg gtg gaa gcc cag cgt ggg gtc ggc	363
Ala Gln Ala Asp Thr Gln Lys Met Val Glu Ala Gln Arg Gly Val Gly	
57 62 67 72	
cct aga gcc tgc tac tcc atc tgg ctc ctc ctg gcg cct aca ccc cct	411
Pro Arg Ala Cys Tyr Ser Ile Trp Leu Leu Leu Ala Pro Thr Pro Pro	
73 78 83 88	
ctc agc cac tgt ctt cag tct cca cag aaa cag cat caa gtg tgc gga	459
Leu Ser His Cys Leu Gln Ser Pro Gln Lys Gln His Gln Val Cys Gly	
89 94 99 104	
gac agg cgg ctg aaa gcc ggc agc acg aac tgc ccg tca gag aag tgc	507
Asp Arg Arg Leu Lys Ala Gly Ser Thr Asn Cys Pro Ser Glu Lys Cys	
105 110 115 120	
aca gcc tgg gcc aga tac tcc cac agg atg gac tca ctg cag aag cag	555
Thr Ala Trp Ala Arg Tyr Ser His Arg Met Asp Ser Leu Gln Lys Gln	
121 126 131 136	
gac ctc cgg agg ccc aag atc cat ggg gca gtc cag gca tct ccc tac	603
Asp Leu Arg Arg Pro Lys Ile His Gly Ala Val Gln Ala Ser Pro Tyr	
137 142 147 152	
cag ccg ccc aca ttg gct tcg ctg cag cgc ttg ctg tgg gtc cgt cag	651
Gln Pro Pro Thr Leu Ala Ser Leu Gln Arg Leu Leu Trp Val Arg Gln	
153 158 163 168	
gct gcc aca ctg aac cat atc gat gag gtc tgg ccc agc ctc ttc ctg	699
Ala Ala Thr Leu Asn His Ile Asp Glu Val Trp Pro Ser Leu Phe Leu	
169 174 179 184	
gga gat gcg tac gca gcc cgg gac aag agc aag ctg atc cag ctg gga	747
Gly Asp Ala Tyr Ala Ala Arg Asp Lys Ser Lys Leu Ile Gln Leu Gly	
185 190 195 200	
atc acc cac gtt gtg aat gcc gct gca ggc aag ttc cag gtg gac aca	795
Ile Thr His Val Val Asn Ala Ala Ala Gly Lys Phe Gln Val Asp Thr	
201 206 211 216	
ggt gcc aaa ttc tac cgt gga atg tcc ctg gag tac tat ggc atc gag	843
Gly Ala Lys Phe Tyr Arg Gly Met Ser Leu Glu Tyr Tyr Gly Ile Glu	
217 222 227 232	
gcg gat gac aac ccc ttc ttc gac ctc agt gtc tac ttt ctg cct gtt	891
Ala Asp Asp Asn Pro Phe Phe Asp Leu Ser Val Tyr Phe Leu Pro Val	
233 238 243 248	

gct cga tac atc cga gct gcc ctc agt gtt ccc caa ggc cgc gtg ctg	939
Ala Arg Tyr Ile Arg Ala Ala Leu Ser Val Pro Gln Gly Arg Val Leu	
249 254 259 264	
gta cac tgt gcc atg ggg gta agc cgc tct gcc aca ctt gtc ctg gcc	987
Val His Cys Ala Met Gly Val Ser Arg Ser Ala Thr Leu Val Leu Ala	
265 270 275 280	
ttc ctc atg atc tgt gag aac atg acg ctg gta gag gcc atc cag acg	1035
Phe Leu Met Ile Cys Glu Asn Met Thr Leu Val Glu Ala Ile Gln Thr	
281 286 291 296	
gtg cag gcc cac cgc aat atc tgc cct aac tca ggc ttc ctc cgg cag	1083
Val Gln Ala His Arg Asn Ile Cys Pro Asn Ser Gly Phe Leu Arg Gln	
297 302 307 312	
ctc cag gtt ctg gac aac cga ctg ggg cgg gag acg ggg cgg ttc tga	1131
Leu Gln Val Leu Asp Asn Arg Leu Gly Arg Glu Thr Gly Arg Phe *	
313 318 323 328	
tctggcaggc agccaggatc cctgaccctt ggcccaaccc caccagcctg gccctgggaa	1191
cagcaggctc tgctgtttct agtgaccctg agatgtaaac agcaagtggg ggctgaggca	1251
gaggcagggg tagctgggtg gtgacctctt agcgggtgga tttccctgac ccaattcaga	1311
gattctttat gcaaaagtga gttcagtcca tctctataat aaaatattca tcgtcataaa	1371
aaaaaaaaa	1380

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 <211> 1227
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (148) .. (978)

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ccgctctgcc acgctggtcc tggcctacct catgctgcac cagcggctgt ccctgcgcca	120
ggcggtgatc accgtgaggc agcaccg	
atg ggt ctt ccc caa ccg agg ctt	171
Met Gly Leu Pro Gln Pro Arg Leu	
1 5	
cct gca cca gct ctg cag gct gga cca gca act gcg ggg tgc cgg cca	219
Pro Ala Pro Ala Leu Gln Ala Gly Pro Ala Thr Ala Gly Cys Arg Pro	
9 14 19 24	
gag ctg agg ggc cag agc tgg tcc tta ctc cct gcc atg ggg ctc tgc	267
Glu Leu Arg Gly Gln Ser Trp Ser Leu Leu Pro Ala Met Gly Leu Cys	

25	30	35	40	
cac ttt gcc acc ctg gca ctg atc ctg ctg gtg ctg ctg gag gct ctg				315
His Phe Ala Thr Leu Ala Leu Ile Leu Leu Val Leu Leu Glu Ala Leu				
41	46	51	56	
gcc cag gcg gac aca cag aag atg gtg gaa gcc cag cgt ggg gtc ggc				363
Ala Gln Ala Asp Thr Gln Lys Met Val Glu Ala Gln Arg Gly Val Gly				
57	62	67	72	
cct aga gcc tgc tac tcc atc tgg ctc ctc ctg gcg cct aca ccc cct				411
Pro Arg Ala Cys Tyr Ser Ile Trp Leu Leu Leu Ala Pro Thr Pro Pro				
73	78	83	88	
ctc agc cac tgt ctt cag tct cca cag aaa cag cat caa gtg tgc gga				459
Leu Ser His Cys Leu Gln Ser Pro Gln Lys Gln His Gln Val Cys Gly				
89	94	99	104	
gac agg cgg ctg aaa gcc ggc agc acg aac tgc ccg tca gag aag tgc				507
Asp Arg Arg Leu Lys Ala Gly Ser Thr Asn Cys Pro Ser Glu Lys Cys				
105	110	115	120	
aca gcc tgg gcc aga tac tcc cac agg atg gac tca ctg cag aag cag				555
Thr Ala Trp Ala Arg Tyr Ser His Arg Met Asp Ser Leu Gln Lys Gln				
121	126	131	136	
gac ctc cgg agg ccc aag atc cat ggg gca gtc cag gca tct ccc tac				603
Asp Leu Arg Arg Pro Lys Ile His Gly Ala Val Gln Ala Ser Pro Tyr				
137	142	147	152	
cag ccg ccc aca ttg gct tgc ctg cag cgc ttg ctg tgg gtc cgt cag				651
Gln Pro Pro Thr Leu Ala Ser Leu Gln Arg Leu Leu Trp Val Arg Gln				
153	158	163	168	
gct gcc aca ctg aac cat atc gat gag gtc tgg ccc agc ctc ttc ctg				699
Ala Ala Thr Leu Asn His Ile Asp Glu Val Trp Pro Ser Leu Phe Leu				
169	174	179	184	
gga gat gcg tac gca gcc cgg gac aag agc aag ctg atc cag ctg gga				747
Gly Asp Ala Tyr Ala Ala Arg Asp Lys Ser Lys Leu Ile Gln Leu Gly				
185	190	195	200	
atc acc cac gtt gtg aat gcc gct gca ggc cgc gtg ctg gta cac tgt				795
Ile Thr His Val Val Asn Ala Ala Ala Gly Arg Val Leu Val His Cys				
201	206	211	216	
gcc atg ggg gta agc cgc tct gcc aca ctt gtc ctg gcc ttc ctc atg				843
Ala Met Gly Val Ser Arg Ser Ala Thr Leu Val Leu Ala Phe Leu Met				
217	222	227	232	
atc tgt gag aac atg acg ctg gta gag gcc atc cag acg gtg cag gcc				891
Ile Cys Glu Asn Met Thr Leu Val Glu Ala Ile Gln Thr Val Gln Ala				
233	238	243	248	
cac cgc aat atc tgc cct aac tca ggc ttc ctc cgg cag ctc cag gtt				939
His Arg Asn Ile Cys Pro Asn Ser Gly Phe Leu Arg Gln Leu Gln Val				
249	254	259	264	

ctg gac aac cga ctg ggg cgg gag acg ggg cgg ttc tga tctggcaggc 988
 Leu Asp Asn Arg Leu Gly Arg Glu Thr Gly Arg Phe *
 265 270 275

agccaggatc cctgaccctt ggcccaaccc caccagcctg gccctgggaa cagcaggctc 1048

tgctgtttct agtgaccctg agatgtaaac agcaagtggg ggctgaggca gaggcaggga 1108

tagctgggtg gtgacctctt agcgggtgga tttccctgac ccaattcaga gattctttat 1168

gcaaaagtga gttcagtcca tctctataat aaaatattca tcgtcataaa aaaaaaaaaa 1227

<210> 1028

<211> 1457

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (227)..(499)

<400> 1028

tctttaatgt aatatctagg agataatttg ttactaatca ataattataa atgtcataac 60

aaatattaat tttagaacc tatactttta ttgaaatgta tcttggtttt aggtttatgt 120

ctcattggat caacctgtga ctgctttaaa tcttttcaaa caaggcttag ataagtttcc 180

aggagaagta accctgctct gtggaattgc aagaatctat gaggaa atg aac aat 235
 Met Asn Asn
 1

atg tca tca gca gca gaa tat tac aaa gaa gtt ttg aaa caa gac aat 283
 Met Ser Ser Ala Ala Glu Tyr Tyr Lys Glu Val Leu Lys Gln Asp Asn
 4 9 14 19

act cat gtg gaa gcc atc gca tgc att gga agc aac cac ttc tat tct 331
 Thr His Val Glu Ala Ile Ala Cys Ile Gly Ser Asn His Phe Tyr Ser
 20 25 30 35

gat cag cca gat ata gct cta cgg ttt tac agg cgg ctg ctg cat atg 379
 Asp Gln Pro Asp Ile Ala Leu Arg Phe Tyr Arg Arg Leu Leu His Met
 36 41 46 51

ggc att tat aac ggc cag ctt ttt aac aat ctg ggg ctg tgt tgc ttc 427
 Gly Ile Tyr Asn Gly Gln Leu Phe Asn Asn Leu Gly Leu Cys Cys Phe
 52 57 62 67

tat gcc cag cag tat gat atg act ctg acc tca ttt gaa cgt gcc ctt 475
 Tyr Ala Gln Gln Tyr Asp Met Thr Leu Thr Ser Phe Glu Arg Ala Leu
 68 73 /78 83

tct ttg gct gaa aat gat gaa tag gcagctgatg tctggtacta cttgggacat 529

Ser Leu Ala Glu Asn Asp Glu *

84

89

gtagctgtgg gaataggaga tacaaatttg gcccatcagt gcttcaggct ggctctggtc 589
aacaacaaca accacgccga ggccataaac aacctggctg tgctggagat gcggaagggc 649
cacgttgaac aggcaagggc actattacaa actgcatcat cattagcacc ccatatgtat 709
gaaccgcatt ttaattttgc aacaatctct gataagattg gagatctgca gagaagctat 769
gttgctgctg agaagtctga agcagcattt ccagaccatg tggacacaca acatttaatt 829
aaacaattaa ggcagcattt tgctatgctc tgattgttcc ttagaccaca tatgttctta 889
tgaagcagca ttatgcaagg ggaaaaaagc actatgtctg tgtatgtatg tatatagtgt 949
aatacgtata ttttaacaaa cctgtccttg atattagtta aggtgacaca taaggggtgac 1009
acagaatgtg taatgcaaata ttcataagtaa tagtaacttt ataaaataat attataaaat 1069
acaggattta aacctttcta aatagatcct gaaactgtct ctcacattat atagtagatg 1129
tttgtttata atgtttacaa aacatttttg tgaatttcct caatgtttta taaatgtaca 1189
ttttttaagt ccttaagctg actcttagcc atcatgtagc ttaaggagtc tgaaatctgc 1249
cattaaaact gcacctttaa gccagggtgtg gtagcatgtg cctatagtcc cagctacttg 1309
ggagggtggag gtgggaggat tataaataga gactttcctt aagactttta aaatgtattt 1369
aaaactattt tttattaaat actttgtgat ttcctattaa gctttaaaat aaatcattgt 1429
gtaaaacacc atcaaaaaaa aaaaaaaa 1457

<210> 1029

<211> 2375

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (63)..(1388)

<400> 1029

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Met Ala Val Val Pro Ala Ser Leu Ser Gly Gln Asp Val Gly Ser
1 5 10
ttt gca tat ctt aca att aaa gac aga ata cca cag atc tta act aag 155
Phe Ala Tyr Leu Thr Ile Lys Asp Arg Ile Pro Gln Ile Leu Thr Lys
16 21 26 31

gtt att gat aca ttg cat cga cat aaa agt gaa ttt ttt gag aaa cac Val Ile Asp Thr Leu His Arg His Lys Ser Glu Phe Phe Glu Lys His 32 37 42 47	203
gga gag gaa ggc gtg gaa gct gaa aag aaa gct atc tct ctc ctt tct Gly Glu Glu Gly Val Glu Ala Glu Lys Lys Ala Ile Ser Leu Leu Ser 48 53 58 63	251
aaa tta cgg aat gaa ttg caa aca gat aaa cca ttt atc ccc ttg gtt Lys Leu Arg Asn Glu Leu Gln Thr Asp Lys Pro Phe Ile Pro Leu Val 64 69 74 79	299
gag aaa ttt gtt gat act gat ata tgg aat cag tac cta gaa tat caa Glu Lys Phe Val Asp Thr Asp Ile Trp Asn Gln Tyr Leu Glu Tyr Gln 80 85 90 95	347
cag agt ctt tta aat gaa agt gat gga aaa tca aga tgg ttc tac tca Gln Ser Leu Leu Asn Glu Ser Asp Gly Lys Ser Arg Trp Phe Tyr Ser 96 101 106 111	395
ccg tgg ttg ttg gta gaa tgt tac atg tat cga aga att cat gaa gca Pro Trp Leu Leu Val Glu Cys Tyr Met Tyr Arg Arg Ile His Glu Ala 112 117 122 127	443
att atc cag agt cca cca atc gat tac ttt gat gta ttt aaa gaa tca Ile Ile Gln Ser Pro Pro Ile Asp Tyr Phe Asp Val Phe Lys Glu Ser 128 133 138 143	491
aaa gag caa aat ttc tat ggg tca cag gaa tcc atc att gct tta tgt Lys Glu Gln Asn Phe Tyr Gly Ser Gln Glu Ser Ile Ile Ala Leu Cys 144 149 154 159	539
act cac ctg caa caa ttg ata aga act att gaa gac cta gat gaa aat Thr His Leu Gln Gln Leu Ile Arg Thr Ile Glu Asp Leu Asp Glu Asn 160 165 170 175	587
cag ctg aaa gat gag ttt ttt aaa ctt ctg cag att tca ctg tgg gga Gln Leu Lys Asp Glu Phe Phe Lys Leu Leu Gln Ile Ser Leu Trp Gly 176 181 186 191	635
aat aag tgt gat ctg tct ctc tca ggt gga gaa agt agt tct cag aat Asn Lys Cys Asp Leu Ser Leu Ser Gly Gly Glu Ser Ser Ser Gln Asn 192 197 202 207	683
acc aat gta cta aat tca ttg gaa gac cta aaa cct ttc att tta ttg Thr Asn Val Leu Asn Ser Leu Glu Asp Leu Lys Pro Phe Ile Leu Leu 208 213 218 223	731
aat gat atg gaa cat ctt tgg tca ttg ctt agc aat tgc aag aaa aca Asn Asp Met Glu His Leu Trp Ser Leu Leu Ser Asn Cys Lys Lys Thr 224 229 234 239	779
aga gaa aaa gct tct gct act aga gtg tat att gtt ctc gat aat tct Arg Glu Lys Ala Ser Ala Thr Arg Val Tyr Ile Val Leu Asp Asn Ser 240 245 250 255	827

gga ttt gag ctt gtt aca gat tta ata tta gcc gac ttc ttg ttg tcc	875
Gly Phe Glu Leu Val Thr Asp Leu Ile Leu Ala Asp Phe Leu Leu Ser	
256 261 266 271	
tct gaa ctg gct act gag gtt cat ttt tat gga aaa aca att cca tgg	923
Ser Glu Leu Ala Thr Glu Val His Phe Tyr Gly Lys Thr Ile Pro Trp	
272 277 282 287	
ttt gtt tct gat act act ata cat gat ttt aat tgg tta att gaa cag	971
Phe Val Ser Asp Thr Thr Ile His Asp Phe Asn Trp Leu Ile Glu Gln	
288 293 298 303	
gta aaa cac agt aat cat aag tgg atg tcc aag tgt ggg gct gac tgg	1019
Val Lys His Ser Asn His Lys Trp Met Ser Lys Cys Gly Ala Asp Trp	
304 309 314 319	
gaa gag tat att aaa atg ggt aaa tgg gtt tac cac aat cat ata ttt	1067
Glu Glu Tyr Ile Lys Met Gly Lys Trp Val Tyr His Asn His Ile Phe	
320 325 330 335	
tgg act ctg cct cat gag tac tgt gca atg cct cag gtt gca cct gac	1115
Trp Thr Leu Pro His Glu Tyr Cys Ala Met Pro Gln Val Ala Pro Asp	
336 341 346 351	
tta tat gct gaa cta cag aag gca cat tta att tta ttc aag ggt gat	1163
Leu Tyr Ala Glu Leu Gln Lys Ala His Leu Ile Leu Phe Lys Gly Asp	
352 357 362 367	
ttg aat tac agg aag ttg aca ggt gac aga aaa tgg gag ttt tct gtt	1211
Leu Asn Tyr Arg Lys Leu Thr Gly Asp Arg Lys Trp Glu Phe Ser Val	
368 373 378 383	
cca ttt cat cag gct ctg aat ggc ttc cat cct gca cca ctc tgt acc	1259
Pro Phe His Gln Ala Leu Asn Gly Phe His Pro Ala Pro Leu Cys Thr	
384 389 394 399	
ata aga aca tta aaa gct gaa att cag gtt ggt ctg cag cct ggg caa	1307
Ile Arg Thr Leu Lys Ala Glu Ile Gln Val Gly Leu Gln Pro Gly Gln	
400 405 410 415	
ggg gaa cag ctc ctg gcc tct gag ccc agc tgg tgg acc act gga aaa	1355
Gly Glu Gln Leu Leu Ala Ser Glu Pro Ser Trp Trp Thr Thr Gly Lys	
416 421 426 431	
tat gga ata ttt cag tac gat ggt ccc ctt tga cttgattt aggagctctc	1406
Tyr Gly Ile Phe Gln Tyr Asp Gly Pro Leu *	
432 437 442	
agttgcatag aaagatctgg tgagcacctt ttcattcccca gaaaaggagc acgtgaattg	1466
agtcgcctgg cggctctgta cgcgctcagg gaagcttagc ttcttggtgc ccatctacgt	1526
gcactggatg atttttcttt tgaacatttt gcccactac actgttttgg ggatagctgg	1586
gttaagcaag ttaaagatat ttacatttat attggaattt tagcaacttt ttttcaggtt	1646
aaatatataa tttcaagtgc ttttaatgaa cttattttta attggctagg gagcaaaaaa	1706

taagtgagtt ctgcttttag ttagttaacc ttgttctttt cttaaatagt acactgcatg	1766
gtatttaata ttccaggaag catgggattt tattttgctt gattttgggc acatgaaata	1826
atagctctag gaaaatgcgc atcttaatga ctctttgtaa agagaggcat ttcttacaac	1886
tgtgatgttt gcttacataa aagttacctc ataagttaat tctaactttt attcttgaat	1946
tttatttcat ttcaatagct tgtttcattt gcacgccttt gtattttgat tgacctgtag	2006
aatggatgtt aggaaactca aaattgaaca cagtgaaca aatggatattt gaagaaatgt	2066
aatatctttt atattctatt tatgatatcc ataatcaaat gagattattt taccacataa	2126
atgttttaaa tatcagattt ttagtttgca gttttaggaa aatgcttttag atagaaaagg	2186
ttcttatgca ttgaatttgg agtactacca acaatgaatg aatttatttt ttatattctt	2246
acacatttta ttggtcattg tcacagatag taaatactaa aaatttcagg tcagtttggt	2306
ttgaaactga aattggaaat aaatctggaa atgttttggt gcactaaaat aataaaatga	2366
attgtactg	2375

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 <213> Homo sapiens

<220>
 <221> CDS
 <222> (96)..(236)

<220>
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 <222> (1)..(455)
 <223> n = a,t,c or g

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cttgatcggg aactcctgct tctccttgcc tcgaa	
atg gac ccc aac tgc tcc	113
Met Asp Pro Asn Cys Ser	
1	
tgc tgc cct gtt ggc tcc tgt gcc tgt gcc ggc tcc tgc aaa tgc aaa	161
Cys Ser Pro Val Gly Ser Cys Ala Cys Ala Gly Ser Cys Lys Cys Lys	
7 12 17 22	
gag tgc aaa tgc acc tcc tgc aag aag agt gag tgc agg gcc ttc cct	209
Glu Cys Lys Cys Thr Ser Cys Lys Lys Ser Glu Cys Arg Ala Phe Pro	
23 28 33 38	

gcg aat ctg ggg gat ggg cca agt tag agcag ggaaccaga gctctgcagg 261
 Ala Asn Leu Gly Asp Gly Pro Ser *
 39 44

caggggcagg ccaatgacca gcttccccaa acccctcctt caacacctga ttcagaatca 321

gacctcaaat tgccttaaaa atgggctgct gctcctgctg ccctgtgggc tgtgccaagt 381

gtgccagggt ctgcattctgc aaagggacgt cagacaagtg cagctgctgt gcctgatgcc 441

aagacagctg tgct 455

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 <211> 922
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (26) .. (520)

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 Met Thr Ala Ser Ala Gln Pro Arg Gly
 1 5

cgg cgg cca gga gtc gga gtc gga gtc gtg gtg acc agc tgc aag cat 100
 Arg Arg Pro Gly Val Gly Val Gly Val Val Val Thr Ser Cys Lys His
 10 15 20 25

ccg cgt tgc gtc ctc ctg ggg aag agg aaa ggc tcg gtt gga gct ggc 148
 Pro Arg Cys Val Leu Leu Gly Lys Arg Lys Gly Ser Val Gly Ala Gly
 26 31 36 41

agt ttc caa ctc cct gga ggt cat ctg gag ttc ggt gaa acc tgg gaa 196
 Ser Phe Gln Leu Pro Gly Gly His Leu Glu Phe Gly Glu Thr Trp Glu
 42 47 52 57

gaa tgt gct caa agg gaa acc tgg gaa gaa gca gct ctt cac ctg aaa 244
 Glu Cys Ala Gln Arg Glu Thr Trp Glu Glu Ala Ala Leu His Leu Lys
 58 63 68 73

aat gtt cac ttt gcc tca gtt gtg aat tct ttc att gag aag gag aat 292
 Asn Val His Phe Ala Ser Val Val Asn Ser Phe Ile Glu Lys Glu Asn
 74 79 84 89

tac cat tat gtt act ata tta atg aaa gga gaa gtg gat gtg act cat 340
 Tyr His Tyr Val Thr Ile Leu Met Lys Gly Glu Val Asp Val Thr His
 90 95 100 105

gat tca gaa cca aag aat gta gag cct gaa aaa aat gaa agt tgg gag 388
 Asp Ser Glu Pro Lys Asn Val Glu Pro Glu Lys Asn Glu Ser Trp Glu
 106 111 116 121

tgg gtt cct tgg gaa gaa cta cct ccc ctg gac cag ctt ttc tgg gga	436
Trp Val Pro Trp Glu Glu Leu Pro Pro Leu Asp Gln Leu Phe Trp Gly	
122 127 132 137	

ctg cgt tgt tta aaa gaa caa ggc tat gat cca ttt aaa gaa gat ctg	484
Leu Arg Cys Leu Lys Glu Gln Gly Tyr Asp Pro Phe Lys Glu Asp Leu	
138 143 148 153	

aac cat ctg gtg gga tac aaa gga aat cat ctc tag gtgg ccgagaagat	534
Asn His Leu Val Gly Tyr Lys Gly Asn His Leu *	
154 159 164	

ttgattttct ttaaaaagac aagaataagg tctggttagg gaatgaaaaa tgtatacatt	594
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tcggaacaac tccattttat ctaaaaaagt tcttgtgatt gccagtttat ttgcagtctc	654
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ttaatgtatc cccactctt tcagccagta cttgagaaaa tttttctgaa atatgtcatt	714
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gaattgtatt ccagacacag aatacatgat aaatactgat attatgggta atctgctttc	774
---	-----

catatttacc tatgatattt actgtgcagt ttgtcattac tagcttgcat ggagtaggat	834
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gcagtcaaat ttgccttagt gtttctgttc aaatagagac ctgaattcaa atattgtagt	894
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ttaggttcaa acagagtatg gctgggtgg	922
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<211> 1501

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (161) .. (1468)

<400> 1032

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ttacgcctac ggtaatgtgg gccctgatgc cctcattgaa	175
atg gac cct gag gcc	
Met Asp Pro Glu Ala	
1	

agt gac ctc tcc cgg ggc att ctg gcg ctc aga gat gtg gct gct gag	223
Ser Asp Leu Ser Arg Gly Ile Leu Ala Leu Arg Asp Val Ala Ala Glu	
6 11 16 21	

gct ggg gtc agc aaa tat aca ggg ggc cga ggc gtc agc gtg ggc ccc	271
Ala Gly Val Ser Lys Tyr Thr Gly Gly Arg Gly Val Ser Val Gly Pro	
22 27 32 37	

atc ctc agc agc agt gcc tcg gat atc ttc tgc gac aat gag aat ggg	319
Ile Leu Ser Ser Ser Ala Ser Asp Ile Phe Cys Asp Asn Glu Asn Gly	

38	43	48	53	
cct aac ttc ctt ttc cac aac cgg ggc gat ggc acc ttt gtg gac gct				367
Pro Asn Phe Leu Phe His Asn Arg Gly Asp Gly Thr Phe Val Asp Ala				
54	59	64	69	
gcg gcc agt gct ggt gtg gac gac ccc cac cag cat ggg cga ggt gtc				415
Ala Ala Ser Ala Gly Val Asp Asp Pro His Gln His Gly Arg Gly Val				
70	75	80	85	
gcc ctg gct gac ttc aac cgt gat ggc aaa gtg gac atc gtc tat ggc				463
Ala Leu Ala Asp Phe Asn Arg Asp Gly Lys Val Asp Ile Val Tyr Gly				
86	91	96	101	
aac tgg aat ggc ccc cac cgc ctc tat ctg caa atg agc acc cat ggg				511
Asn Trp Asn Gly Pro His Arg Leu Tyr Leu Gln Met Ser Thr His Gly				
102	107	112	117	
aag gtc cgc ttc cgg gac atc gcc tca ccc aag ttc tcc atg ccc tcc				559
Lys Val Arg Phe Arg Asp Ile Ala Ser Pro Lys Phe Ser Met Pro Ser				
118	123	128	133	
cct gtc cgc acg gtc atc acc gcc gac ttt gac aat gac cag gag ctg				607
Pro Val Arg Thr Val Ile Thr Ala Asp Phe Asp Asn Asp Gln Glu Leu				
134	139	144	149	
gag atc ttc ttc aac aac att gcc tac cgc agc tcc tca gcc aac cgc				655
Glu Ile Phe Phe Asn Asn Ile Ala Tyr Arg Ser Ser Ser Ala Asn Arg				
150	155	160	165	
ctc ttc cgc gtc atc cgt aga gag cac gga gac ccc ctc atc gag gag				703
Leu Phe Arg Val Ile Arg Arg Glu His Gly Asp Pro Leu Ile Glu Glu				
166	171	176	181	
ctc aat ccc ggc gac gcc ttg gag cct gag ggc cgg ggc aca ggg ggt				751
Leu Asn Pro Gly Asp Ala Leu Glu Pro Glu Gly Arg Gly Thr Gly Gly				
182	187	192	197	
gtg gtg acc gac ttc gac gga gac ggg atg ctg gac ctc atc ttg tcc				799
Val Val Thr Asp Phe Asp Gly Asp Gly Met Leu Asp Leu Ile Leu Ser				
198	203	208	213	
cat gga gag tcc atg gct cag ccg ctg tcc gtc ttc cgg ggc aat cag				847
His Gly Glu Ser Met Ala Gln Pro Leu Ser Val Phe Arg Gly Asn Gln				
214	219	224	229	
ggc ttc aac aac aac tgg ctg cga gtg gtg cca cgc acc cgg ttt ggg				895
Gly Phe Asn Asn Asn Trp Leu Arg Val Val Pro Arg Thr Arg Phe Gly				
230	235	240	245	
gcc ttt gcc agg gga gct aag gtc gtg ctc tac acc aag aag agt ggg				943
Ala Phe Ala Arg Gly Ala Lys Val Val Leu Tyr Thr Lys Lys Ser Gly				
246	251	256	261	
gcc cac ctg agg atc atc gac ggg ggc tca ggc tac ctg tgt gag atg				991
Ala His Leu Arg Ile Ile Asp Gly Gly Ser Gly Tyr Leu Cys Glu Met				
262	267	272	277	

gag ccc gtg gca cac ttt ggc ctg ggg aag gat gaa gcc agc agt gtg	1039
Glu Pro Val Ala His Phe Gly Leu Gly Lys Asp Glu Ala Ser Ser Val	
278 283 288 293	
gag gtg acg tgg cca gat ggc aag atg gtg agc cgg aac gtg gcc agc	1087
Glu Val Thr Trp Pro Asp Gly Lys Met Val Ser Arg Asn Val Ala Ser	
294 299 304 309	
ggg gag atg aac tca gtg ctg gag atc ctc tac ccc cgg gat gag gac	1135
Gly Glu Met Asn Ser Val Leu Glu Ile Leu Tyr Pro Arg Asp Glu Asp	
310 315 320 325	
aca ctt cag gac cca gcc cca ctg gag tgt ggc caa gga ttc tcc cag	1183
Thr Leu Gln Asp Pro Ala Pro Leu Glu Cys Gly Gln Gly Phe Ser Gln	
326 331 336 341	
cag gaa aat ggc cat tgc atg gac acc aat gaa tgc atc cag ttc cca	1231
Gln Glu Asn Gly His Cys Met Asp Thr Asn Glu Cys Ile Gln Phe Pro	
342 347 352 357	
ttc gtg tgc cct cga gac aag ccc gta tgt gtc aac acc tat gga agc	1279
Phe Val Cys Pro Arg Asp Lys Pro Val Cys Val Asn Thr Tyr Gly Ser	
358 363 368 373	
tac agg tgc cgg acc aac aag aag tgc agt cgg ggc tac gag ccc aac	1327
Tyr Arg Cys Arg Thr Asn Lys Lys Cys Ser Arg Gly Tyr Glu Pro Asn	
374 379 384 389	
gag gat ggc aca gcc tgc gtg gct caa gtg gcc ttt tta ggt ggg tat	1375
Glu Asp Gly Thr Ala Cys Val Ala Gln Val Ala Phe Leu Gly Gly Tyr	
390 395 400 405	
tct tca gcc gcc tct aga atc tct gag cct ctc tct cgg gcc tca tat	1423
Ser Ser Ala Ala Ser Arg Ile Ser Glu Pro Leu Ser Arg Ala Ser Tyr	
406 411 416 421	
ctt tct cta ggc ctt gga ctt tgc ctt cag tta tat gca ctt taa atc	1471
Leu Ser Leu Gly Leu Gly Leu Cys Leu Gln Leu Tyr Ala Leu *	
422 427 432	
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 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (160) .. (1497)

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198	203	208	213	
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gcc acc cag tca gga aag aat gta tat ttg acg gtc acc aag gaa tct Ala Thr Gln Ser Gly Lys Asn Val Tyr Leu Thr Val Thr Lys Glu Ser 230 235 240 245				894
ggg aac agc atc gtg ctt ttg ttt aaa atg atc agc acc agg gcg gcc Gly Asn Ser Ile Val Leu Leu Phe Lys Met Ile Ser Thr Arg Ala Ala 246 251 256 261				942
agc ggg ctc tac cga gcg ata aca gag acg cac gca ttc tac agg tgt Ser Gly Leu Tyr Arg Ala Ile Thr Glu Thr His Ala Phe Tyr Arg Cys 262 267 272 277				990
gac aca gtg acc agc gcc gtg atg atg cag tat agc cgt gac ttg aag Asp Thr Val Thr Ser Ala Val Met Met Gln Tyr Ser Arg Asp Leu Lys 278 283 288 293				1038
ggc cac ttg gca tct ctg ttt ctg aat gaa aac att aac ctt ggc aag Gly His Leu Ala Ser Leu Phe Leu Asn Glu Asn Ile Asn Leu Gly Lys 294 299 304 309				1086
aaa tat gtc ttt gat att aaa aga aca tca aag gag gtg tat gac cat Lys Tyr Val Phe Asp Ile Lys Arg Thr Ser Lys Glu Val Tyr Asp His 310 315 320 325				1134
gcc agg agg gct ctg tac aat gct ggc gtt gtg gac ctc gtt tca aga Ala Arg Arg Ala Leu Tyr Asn Ala Gly Val Asp Leu Val Ser Arg 326 331 336 341				1182
aac aac cag agc cct tca cac tcg cct ctg aag tcc tca gaa agc agc Asn Asn Gln Ser Pro Ser His Ser Pro Leu Lys Ser Ser Glu Ser Ser 342 347 352 357				1230
atg aac tgc agc agc tgc gag ggc ctc agc tgc cag cag acc cgg gtg Met Asn Cys Ser Ser Cys Glu Gly Leu Ser Cys Gln Gln Thr Arg Val 358 363 368 373				1278
ctg cag gag aag cta cgc aag ctg aag gaa gcc atg ctg tgc atg gtg Leu Gln Glu Lys Leu Arg Lys Leu Lys Glu Ala Met Leu Cys Met Val 374 379 384 389				1326
tgc tgc gag gag gag atc aac tcc acc ttc tgt ccc tgt ggc cac act Cys Cys Glu Glu Glu Ile Asn Ser Thr Phe Cys Pro Cys Gly His Thr 390 395 400 405				1374
gtg tgc tgt gag agc tgc gcc gcc cag cta cag tca tgt ccc gtc tgc Val Cys Cys Glu Ser Cys Ala Ala Gln Leu Gln Ser Cys Pro Val Cys 406 411 416 421				1422
agg tcg cgt gtg gag cat gtc cag cac gtc tat ctg cca acg cac acc Arg Ser Arg Val Glu His Val Gln His Val Tyr Leu Pro Thr His Thr 422 427 432 437				1470

agt ctt ctc aat ctg act gta atc taa tctgt tgtgcttttg ttggacttgg 1522
 Ser Leu Leu Asn Leu Thr Val Ile *
 438 443

catgtttcca tgaactgcac tattataaac tattaaaaatg atagattgtg gagaaagtaa 1582

ttattccaac acccatctgc catgcatgtg taaaaaaaaa aaaa 1626

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 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (120)..(2024)

<400> 1034
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gcggcctcgg ctggcggcgg caccaggcca cagttgtaag ggatcttgtg gctgtcagg 119
 atg gca gag gag cag gag ttc acc cag ctc tgc aag ttg cct gca cag 167
 Met Ala Glu Glu Gln Glu Phe Thr Gln Leu Cys Lys Leu Pro Ala Gln
 1 5 10 15

ccc tca cac cca cac tgc gtg aac aac acc tac cgc agc gca cag cac 215
 Pro Ser His Pro His Cys Val Asn Asn Thr Tyr Arg Ser Ala Gln His
 17 22 27 32

tcc cag gct ctg ctc cga ggg ctg ctg gct ctc cgg gac agc gga atc 263
 Ser Gln Ala Leu Leu Arg Gly Leu Leu Ala Leu Arg Asp Ser Gly Ile
 33 38 43 48

ctc ttc gat gtt gtg ctg gtg gtg gag ggc aga cac atc gag gcc cat 311
 Leu Phe Asp Val Val Leu Val Val Glu Gly Arg His Ile Glu Ala His
 49 54 59 64

cgc atc ctg ctg gct gcg tcc tgc gat tac ttc aaa gga atg ttt gct 359
 Arg Ile Leu Leu Ala Ala Ser Cys Asp Tyr Phe Lys Gly Met Phe Ala
 65 70 75 80

ggg gga ttg aag gag atg gaa cag gaa gag gtc ctg atc cac ggt gtg 407
 Gly Gly Leu Lys Glu Met Glu Gln Glu Glu Val Leu Ile His Gly Val
 81 86 91 96

tcc tac aat gct atg tgc caa atc cta cat ttc ata tac acc tcc gag 455
 Ser Tyr Asn Ala Met Cys Gln Ile Leu His Phe Ile Tyr Thr Ser Glu
 97 102 107 112

ctg gag ctc agc ctg agc aat gta caa gag aca ctg gtg gct gcc tgc 503
 Leu Glu Leu Ser Leu Ser Asn Val Gln Glu Thr Leu Val Ala Ala Cys
 113 118 123 128

cag ctt cag atc cca gaa att atc cat ttc tgc tgt gat ttc ctc atg	551
Gln Leu Gln Ile Pro Glu Ile Ile His Phe Cys Cys Asp Phe Leu Met	
129 134 139 144	
tcc tgg gtg gac gaa gag aac att ctc gat gtc tac cgg ctg gca gag	599
Ser Trp Val Asp Glu Glu Asn Ile Leu Asp Val Tyr Arg Leu Ala Glu	
145 150 155 160	
ctg ttt gac ttg agc cgc ctg act gag caa ctg gac acc tat atc ctc	647
Leu Phe Asp Leu Ser Arg Leu Thr Glu Gln Leu Asp Thr Tyr Ile Leu	
161 166 171 176	
aaa aac ttt gtg gcc ttc tct cgg act gac aag tac cgc cag ctt cca	695
Lys Asn Phe Val Ala Phe Ser Arg Thr Asp Lys Tyr Arg Gln Leu Pro	
177 182 187 192	
ttg gag aag gtc tac tcc ctc ctc agc agc aat cgc ctg gag gtc tcc	743
Leu Glu Lys Val Tyr Ser Leu Leu Ser Ser Asn Arg Leu Glu Val Ser	
193 198 203 208	
tgc gag acc gag gta tat gag ggg gcc ctt ctc tac cat tat agc ctg	791
Cys Glu Thr Glu Val Tyr Glu Gly Ala Leu Leu Tyr His Tyr Ser Leu	
209 214 219 224	
gag cag gtg cag gct gac cag atc tcg ctg cac gag ccc cca aag ctc	839
Glu Gln Val Gln Ala Asp Gln Ile Ser Leu His Glu Pro Pro Lys Leu	
225 230 235 240	
ctt gag aca gtg cgg ttt ccg ctg atg gaa gct gag gtc ctg cag cgg	887
Leu Glu Thr Val Arg Phe Pro Leu Met Glu Ala Glu Val Leu Gln Arg	
241 246 251 256	
ctg cat gac aag ctg gac ccc agc cct ttg agg gac aca gtg gcc agc	935
Leu His Asp Lys Leu Asp Pro Ser Pro Leu Arg Asp Thr Val Ala Ser	
257 262 267 272	
gcc ctc atg tac cac cgg aac gag agc cta cag ccc agc ctg cag agc	983
Ala Leu Met Tyr His Arg Asn Glu Ser Leu Gln Pro Ser Leu Gln Ser	
273 278 283 288	
ccg caa acg gag ctg cgg tcg gac ttc cag tgc gtt gtg ggc ttc ggg	1031
Pro Gln Thr Glu Leu Arg Ser Asp Phe Gln Cys Val Val Gly Phe Gly	
289 294 299 304	
ggc att cac tcc acg ccg tcc act gtc ctc agc gac cag gcc aag tat	1079
Gly Ile His Ser Thr Pro Ser Thr Val Leu Ser Asp Gln Ala Lys Tyr	
305 310 315 320	
cta aac ccc tta ctg gga gag tgg aag cac ttc act gcc tcc ctg gcc	1127
Leu Asn Pro Leu Leu Gly Glu Trp Lys His Phe Thr Ala Ser Leu Ala	
321 326 331 336	
ccc cgc atg tcc aac cag ggc atc gcg gtg ctc aac aac ttc gta tac	1175
Pro Arg Met Ser Asn Gln Gly Ile Ala Val Leu Asn Asn Phe Val Tyr	
337 342 347 352	/
ttg att gga ggg gac aac aat gtc caa gga ttt cga gca gag tcc cga	1223

Leu Ile Gly Gly Asp Asn Asn Val Gln Gly Phe Arg Ala Glu Ser Arg	
353 358 363 368	
tgc tgg agg tat gac cca cgg cac aac cgc tgg ttc cag atc cag tcc	1271
Cys Trp Arg Tyr Asp Pro Arg His Asn Arg Trp Phe Gln Ile Gln Ser	
369 374 379 384	
ctg cag cag gag cac gcc gac ctg tcc gtg tgt gtt gta ggc agg tac	1319
Leu Gln Gln Glu His Ala Asp Leu Ser Val Cys Val Val Gly Arg Tyr	
385 390 395 400	
atc tac gct gtg gcg ggc cgt gac tac cac aat gac ctg aat gct gtg	1367
Ile Tyr Ala Val Ala Gly Arg Asp Tyr His Asn Asp Leu Asn Ala Val	
401 406 411 416	
gag cgc tac gac cct gcc acc aac tcc tgg gca tac gtg gcc cca ctc	1415
Glu Arg Tyr Asp Pro Ala Thr Asn Ser Trp Ala Tyr Val Ala Pro Leu	
417 422 427 432	
aag agg gag gtg tat gcc cac gca ggc gcg acg ctg gag ggg aag atg	1463
Lys Arg Glu Val Tyr Ala His Ala Gly Ala Thr Leu Glu Gly Lys Met	
433 438 443 448	
tat atc acc tgc ggc cgc aga ggg gag gat tac ctg aaa gag aca cac	1511
Tyr Ile Thr Cys Gly Arg Arg Gly Glu Asp Tyr Leu Lys Glu Thr His	
449 454 459 464	
tgc tac gat cca ggc agc aac act tgg cac aca ctg gct gat ggg cct	1559
Cys Tyr Asp Pro Gly Ser Asn Thr Trp His Thr Leu Ala Asp Gly Pro	
465 470 475 480	
gtg cgg cgc gcc tgg cac ggc atg gca acc ctc ctc aac aag ctg tat	1607
Val Arg Arg Ala Trp His Gly Met Ala Thr Leu Leu Asn Lys Leu Tyr	
481 486 491 496	
gtg atc ggg ggc agc aac aac gat gcc gga tac agg agg gac gtg cac	1655
Val Ile Gly Gly Ser Asn Asn Asp Ala Gly Tyr Arg Arg Asp Val His	
497 502 507 512	
cag gtg gcc tgc tac agc tgc acg tct gga cag tgg tca tct gtc tgc	1703
Gln Val Ala Cys Tyr Ser Cys Thr Ser Gly Gln Trp Ser Ser Val Cys	
513 518 523 528	
cca ctc cct gct ggg cac ggt gag cct ggc att gct gtg ctg gac aac	1751
Pro Leu Pro Ala Gly His Gly Glu Pro Gly Ile Ala Val Leu Asp Asn	
529 534 539 544	
agg atc tat gtg tta ggt ggc cgc tca cac aac cgc ggc agc cgc aca	1799
Arg Ile Tyr Val Leu Gly Gly Arg Ser His Asn Arg Gly Ser Arg Thr	
545 550 555 560	
ggc tac gtg cac att tac gat gtg gag aag gac tgc tgg gag gaa ggg	1847
Gly Tyr Val His Ile Tyr Asp Val Glu Lys Asp Cys Trp Glu Glu Gly	
561 566 571 576	
ccc cag ctg gac aac tcc atc tca ggc ctg gcg gcc tgt gtg ctc acc	1895
Pro Gln Leu Asp Asn Ser Ile Ser Gly Leu Ala Ala Cys Val Leu Thr	

577	582	587	592	
ctg ccc cgc tcc ctg ctc ctt gag ccg ccc cgc ggg acc cct gac cgc				1943
Leu Pro Arg Ser Leu Leu Leu Glu Pro Pro Arg Gly Thr Pro Asp Arg				
593	598	603	608	
agc cag gcc gac ccg gac ttt gcc tct gag gtg atg agt gtg tct gac				1991
Ser Gln Ala Asp Pro Asp Phe Ala Ser Glu Val Met Ser Val Ser Asp				
609	614	619	624	
tgg gag gag ttt gac aac tcc agt gag gac tag gctccctg tgcctggcat				2042
Trp Glu Glu Phe Asp Asn Ser Ser Glu Asp *				
625	630	635		
cagaggggaag ggaggctggg gctgcagggc agtgaaaccc acgcagccta ggccagagca				2102
ctttactcca ggcaggggccc ctgcccctgt tggccacagc ttatggggccc tgccctcttt				2162
cttcacacca gccccttggc cagcctgccg caggcatctc agggccatgc agatcccagg				2222
ctgtggatta cgtcactgca ggaactgctt ctgaaaggct ttggccttcc tcagtgagcc				2282
ctggaggggt tggccttctc tccctccctgc ctagatcagt ccttctccaa aaggacctgg				2342
gagctggcag cctgggcagg ggggctgagg cacgtggtag ccctctttct gtgaatgggg				2402
tggggctgtg ggggcagctg ggggttgagg atgagagctc ctgaggggca gaggagcaga				2462
gatgcatcag ctgcctggg actggctctg tgataaaaag acccctcccg ctgggttttc				2522
agaccccatg ttgttggtca atgaaataaa gcattctaca gaaaaaaaaa aaaa				2576

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 <212> DNA
 <213> Homo sapiens

<220>
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gcggcggcgg cggccggacc cagactggta gtgaggcggt ggaccccgag ccgctgca	118
atg ccg ctg gag ctg gag ctg tgt ccc ggg cgc tgg gtg ggc ggg caa	166
Met Pro Leu Glu Leu Glu Leu Cys Pro Gly Arg Trp Val Gly Gly Gln	
1 5 10 15	
cac ccg tgc ttc atc att gcc gag atc ggc cag aac cac cag ggc gac	214
His Pro Cys Phe Ile Ile Ala Glu Ile Gly Gln Asn His Gln Gly Asp	
17 22 27 32	
ctg gac gta gcc aag cgc atg atc cgc atg gcc aag gag tgt ggg gct	262

Leu Asp Val Ala Lys Arg Met Ile Arg Met Ala Lys Glu Cys Gly Ala	
33 38 43 48	
gat tgt gcc aag ttc cag aag agt gag cta gaa ttc aag ttt aat cgg	310
Asp Cys Ala Lys Phe Gln Lys Ser Glu Leu Glu Phe Lys Phe Asn Arg	
49 54 59 64	
aaa gcc ttg gac agg cca tac acc tcg aag cat tcc tgg ggg aag acg	358
Lys Ala Leu Asp Arg Pro Tyr Thr Ser Lys His Ser Trp Gly Lys Thr	
65 70 75 80	
tac ggg gag cac aaa cga cat ctg gag ttc agc cat gac cag tac agg	406
Tyr Gly Glu His Lys Arg His Leu Glu Phe Ser His Asp Gln Tyr Arg	
81 86 91 96	
gag ctg cag agg tac gcc gag gag gtt ggg atc ttc ttc act gcc tct	454
Glu Leu Gln Arg Tyr Ala Glu Glu Val Gly Ile Phe Phe Thr Ala Ser	
97 102 107 112	
ggc atg gat gag atg gca gtt gaa ttc ctg cat gaa ctg aat gtt cca	502
Gly Met Asp Glu Met Ala Val Glu Phe Leu His Glu Leu Asn Val Pro	
113 118 123 128	
ttt ttc aaa gtt gga tct gga gac act aat aat ttt cct tat ctg gaa	550
Phe Phe Lys Val Gly Ser Gly Asp Thr Asn Asn Phe Pro Tyr Leu Glu	
129 134 139 144	
aag aca gcc aaa aaa ggt cgc cca atg gtg atc tcc agt ggg atg cag	598
Lys Thr Ala Lys Lys Gly Arg Pro Met Val Ile Ser Ser Gly Met Gln	
145 150 155 160	
tca atg gac acc atg aag caa gtt tat cag atc gtg aag ccc ctc aac	646
Ser Met Asp Thr Met Lys Gln Val Tyr Gln Ile Val Lys Pro Leu Asn	
161 166 171 176	
ccc aac ttc tgc ttc ttg cag tgt acc agc gca tac ccg ctc cag cct	694
Pro Asn Phe Cys Phe Leu Gln Cys Thr Ser Ala Tyr Pro Leu Gln Pro	
177 182 187 192	
gag gac gtc aac ctg cgg gtc atc tcg gaa tat cag aag ctc ttt cct	742
Glu Asp Val Asn Leu Arg Val Ile Ser Glu Tyr Gln Lys Leu Phe Pro	
193 198 203 208	
gac att ccc ata ggg tat tct ggg cat gaa aca ggc ata gcg ata tct	790
Asp Ile Pro Ile Gly Tyr Ser Gly His Glu Thr Gly Ile Ala Ile Ser	
209 214 219 224	
gtg gcc gca gtg gct ctg ggg gcc aag gtg ttg gaa cgt cac ata act	838
Val Ala Ala Val Ala Leu Gly Ala Lys Val Leu Glu Arg His Ile Thr	
225 230 235 240	
ttg gac aag acc tgg aag ggg agt gac cac tcg gcc tcg ctg gag cct	886
Leu Asp Lys Thr Trp Lys Gly Ser Asp His Ser Ala Ser Leu Glu Pro	
241 246 251 256	
gga gaa ctg gcc gag ctg gtg cgg tca gtg cgt ctt gtg gag cgt gcc	934
Gly Glu Leu Ala Glu Leu Val Arg Ser Val Arg Leu Val Glu Arg Ala	

257	262	267	272	
ctg ggc tcc cca acc aag cag ctg ctg ccc tgt gag atg gcc tgc aat				982
Leu Gly Ser Pro Thr Lys Gln Leu Leu Pro Cys Glu Met Ala Cys Asn				
273	278	283	288	
gag aag ctg ggc aag tct gtg gtg gcc aaa gtg aaa att ccg gaa ggc				1030
Glu Lys Leu Gly Lys Ser Val Val Ala Lys Val Lys Ile Pro Glu Gly				
289	294	299	304	
acc att cta aca atg gac atg ctc acc gtg aag gtg ggt gag ccc aaa				1078
Thr Ile Leu Thr Met Asp Met Leu Thr Val Lys Val Gly Glu Pro Lys				
305	310	315	320	
ggc tat cct cct gaa gac atc ttt aat cta gtg ggc aag aag gtc ctg				1126
Gly Tyr Pro Pro Glu Asp Ile Phe Asn Leu Val Gly Lys Lys Val Leu				
321	326	331	336	
gtc act gtt gaa gag gat gac acc atc atg gaa gaa ttg gta gat aat				1174
Val Thr Val Glu Glu Asp Asp Thr Ile Met Glu Glu Leu Val Asp Asn				
337	342	347	352	
cat ggc aaa aaa atc aag tct taa aaataaagtg ccattctctg aaaaaaaaaa				1228
His Gly Lys Lys Ile Lys Ser *				
353	358			
aa				1230

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 <212> DNA
 <213> Homo sapiens

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 <222> (172)..(1095)

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aggatccgaa ttcgcggccg cgtcgacgga atcccatctg gagactcgct aagcgtccca	120
gccgcateccc tcccgcagcg acggcggccc gggacccgcg ggctgtgaac c atg aac	177
Met Asn	
1	
acc cgc aat aga gtg gtg aac tcc ggg ctc ggc gcc tcc cct gcc tcc	225
Thr Arg Asn Arg Val Val Asn Ser Gly Leu Gly Ala Ser Pro Ala Ser	
3 8 13 18	
cgc ccg acc cgg gat ccc cag gac cct tct ggg cgg caa ggg gag ctg	273
Arg Pro Thr Arg Asp Pro Gln Asp Pro Ser Gly Arg Gln Gly Glu Leu	
19 24 29 34	

agc ccc gtg gaa gac cag aga gag ggt ttg gag gca gcc cct aag ggc	321
Ser Pro Val Glu Asp Gln Arg Glu Gly Leu Glu Ala Ala Pro Lys Gly	
35 40 45 50	
cct tcg cgg gag agc gtc gtg cac gcg ggc cag agg cgc aca agt gca	369
Pro Ser Arg Glu Ser Val Val His Ala Gly Gln Arg Arg Thr Ser Ala	
51 56 61 66	
tac acc ttg ata gca cca aat ata aac cgg aga aat gag ata caa aga	417
Tyr Thr Leu Ile Ala Pro Asn Ile Asn Arg Arg Asn Glu Ile Gln Arg	
67 72 77 82	
att gcg gag cag gag ctg gcc aac ctg gag aag tgg aag gag cag aac	465
Ile Ala Glu Gln Glu Leu Ala Asn Leu Glu Lys Trp Lys Glu Gln Asn	
83 88 93 98	
aga gct aaa ccg gtt cac ctg gtg ccc aga cgg cta ggt gga agc cag	513
Arg Ala Lys Pro Val His Leu Val Pro Arg Arg Leu Gly Gly Ser Gln	
99 104 109 114	
tca gaa act gaa gtc aga cag aaa caa caa ctc cag ctg atg caa tct	561
Ser Glu Thr Glu Val Arg Gln Lys Gln Gln Leu Gln Leu Met Gln Ser	
115 120 125 130	
aaa tac aag caa aag cta aaa aga gaa gaa tct gta aga atc aag aag	609
Lys Tyr Lys Gln Lys Leu Lys Arg Glu Glu Ser Val Arg Ile Lys Lys	
131 136 141 146	
gaa gct gaa gaa gct gaa ctc caa aaa atg aag gca att cag aga gag	657
Glu Ala Glu Glu Ala Glu Leu Gln Lys Met Lys Ala Ile Gln Arg Glu	
147 152 157 162	
aag agc aat aaa ctg gag gag aaa aaa aga ctt caa gaa aac ctt aga	705
Lys Ser Asn Lys Leu Glu Glu Lys Lys Arg Leu Gln Glu Asn Leu Arg	
163 168 173 178	
aga gaa gca ttt aga gag cat cag caa tac aaa acc gct gag ttc ttg	753
Arg Glu Ala Phe Arg Glu His Gln Gln Tyr Lys Thr Ala Glu Phe Leu	
179 184 189 194	
agc aaa ctg aac aca gaa tcg cca gac aga agt gcc tgt caa agt gct	801
Ser Lys Leu Asn Thr Glu Ser Pro Asp Arg Ser Ala Cys Gln Ser Ala	
195 200 205 210	
gtt tgt ggc cca caa tcc tca aca tgg gcc aga agc tgg gct tac aga	849
Val Cys Gly Pro Gln Ser Ser Thr Trp Ala Arg Ser Trp Ala Tyr Arg	
211 216 221 226	
gat tct cta aag gca gaa gaa aac aga aaa ttg caa aag atg aag gat	897
Asp Ser Leu Lys Ala Glu Glu Asn Arg Lys Leu Gln Lys Met Lys Asp	
227 232 237 242	
gaa caa cat caa aag agt gaa tta ctg gaa ctg aaa cgg cag cag caa	945
Glu Gln His Gln Lys Ser Glu Leu Leu Glu Leu Lys Arg Gln Gln Gln	
243 248 / 253 258	
gag caa gaa aga gcc aaa atc cac cag act gaa cac agg agg gta aat	993

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 <222> (158)..(1717)

<400> 1037

tcggctctgc aggaattcgg cacgagttcc ttgtggctgg agcgcttccc gtagcctcgg	60
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aacctctttc acgagctata aaagaaaggg aggaatc atg tcc aca att gca gct	175
Met Ser Thr Ile Ala Ala	
1	
ttc tat ggc ggc aag tcc att ctc atc acg ggg gcc aca ggc ttt ctg	223
Phe Tyr Gly Gly Lys Ser Ile Leu Ile Thr Gly Ala Thr Gly Phe Leu	
7 12 17 22	
ggc aaa gtg cta atg gag aag ctg ttt cgc acc agc cca gac ctg aaa	271
Gly Lys Val Leu Met Glu Lys Leu Phe Arg Thr Ser Pro Asp Leu Lys	
23 28 33 38	
gtc att tac atc ctt gtg agg ccc aag gct ggc cag aca ctg cag cag	319
Val Ile Tyr Ile Leu Val Arg Pro Lys Ala Gly Gln Thr Leu Gln Gln	
39 44 49 54	
agg gtt ttc cag atc cta gac agt aag cta ttt gag aaa gtc aaa gaa	367
Arg Val Phe Gln Ile Leu Asp Ser Lys Leu Phe Glu Lys Val Lys Glu	
55 60 65 70	
gtt tgt cca aat gtg cat gag aag atc aga gct att tat gca gat ctc	415
Val Cys Pro Asn Val His Glu Lys Ile Arg Ala Ile Tyr Ala Asp Leu	
71 76 81 86	
aat cag aat gac ttt gcc atc agc aaa gag gac atg cag gag ctt ctc	463
Asn Gln Asn Asp Phe Ala Ile Ser Lys Glu Asp Met Gln Glu Leu Leu	
87 92 97 102	
tcc tgt aca aac ata ata ttt cac tgt gca gcc act gta cgc ttt gac	511
Ser Cys Thr Asn Ile Ile Phe His Cys Ala Ala Thr Val Arg Phe Asp	
103 108 113 118	
gac act ctc aga cat gct gtg caa ctt aac gtc act gcc acc cgg cag	559
Asp Thr Leu Arg His Ala Val Gln Leu Asn Val Thr Ala Thr Arg Gln	
119 124 129 134	
ctc ttg ctt atg gct agt cag atg cca aag ctg gaa gcc ttt ata cat	607
Leu Leu Leu Met Ala Ser Gln Met Pro Lys Leu Glu Ala Phe Ile His	
135 140 145 150	
atc tct act gcc tat tca aat tgt aac ctg aag cac atc gat gaa gtt	655
Ile Ser Thr Ala Tyr Ser Asn Cys Asn Leu Lys His Ile Asp Glu Val	
151 156 161 166	
atc tat ccg tgc cct gtg gag cca aaa aaa atc att gat tcc ctt gag	703
Ile Tyr Pro Cys Pro Val Glu Pro Lys Lys Ile Ile Asp Ser Leu Glu	
167 172 177 182	

tgg tta gac gat gct att att gac gag att aca ccc aag ctg atc aga	751
Trp Leu Asp Asp Ala Ile Ile Asp Glu Ile Thr Pro Lys Leu Ile Arg	
183 188 193 198	
gat tgg ccc aat att tat acc tac acc aag gcc ttg gga gaa atg gtg	799
Asp Trp Pro Asn Ile Tyr Thr Tyr Thr Lys Ala Leu Gly Glu Met Val	
199 204 209 214	
gtg cag cac gag agc agg atc ctg aac att gcc atc ata agg ccc tcc	847
Val Gln His Glu Ser Arg Ile Leu Asn Ile Ala Ile Ile Arg Pro Ser	
215 220 225 230	
att gtg gga gca act tgg cag gag cct ttc cca ggt tgg gtt gat aat	895
Ile Val Gly Ala Thr Trp Gln Glu Pro Phe Pro Gly Trp Val Asp Asn	
231 236 241 246	
ata aat gga cct aat gga atc att att gcg act ggg aaa ggg ttt ctt	943
Ile Asn Gly Pro Asn Gly Ile Ile Ile Ala Thr Gly Lys Gly Phe Leu	
247 252 257 262	
cgg gcc ata aaa gct act cca atg gct gtg gca gac gta att cca gtt	991
Arg Ala Ile Lys Ala Thr Pro Met Ala Val Ala Asp Val Ile Pro Val	
263 268 273 278	
gat aca gtc gtc aat ctg atg cta gct gta gga tgg tat act gca gtt	1039
Asp Thr Val Val Asn Leu Met Leu Ala Val Gly Trp Tyr Thr Ala Val	
279 284 289 294	
cac aga cct aag tca aca tta gtc tac cac att aca tct ggt aac atg	1087
His Arg Pro Lys Ser Thr Leu Val Tyr His Ile Thr Ser Gly Asn Met	
295 300 305 310	
aat ccc tgc aat tgg cac aaa atg gga gtc caa gtc ttg gca acc ttt	1135
Asn Pro Cys Asn Trp His Lys Met Gly Val Gln Val Leu Ala Thr Phe	
311 316 321 326	
gaa aaa atc cca ttt gag aga cct ttc agg agg cca aat gct aat ttt	1183
Glu Lys Ile Pro Phe Glu Arg Pro Phe Arg Arg Pro Asn Ala Asn Phe	
327 332 337 342	
acc agc aac agc ttc aca tca cag tac tgg aat gcg gtc agc cac cgg	1231
Thr Ser Asn Ser Phe Thr Ser Gln Tyr Trp Asn Ala Val Ser His Arg	
343 348 353 358	
gcc cct gcc att atc tat gac tgc tat ctg cgg ctc act gga agg aag	1279
Ala Pro Ala Ile Ile Tyr Asp Cys Tyr Leu Arg Leu Thr Gly Arg Lys	
359 364 369 374	
ccc agg atg aca aag ctg atg aat cgg ctt tta aga act gtt tcc atg	1327
Pro Arg Met Thr Lys Leu Met Asn Arg Leu Leu Arg Thr Val Ser Met	
375 380 385 390	
ttg gag tat ttc atc aac cgg agt tgg gaa tgg agc acg tac aat aca	1375
Leu Glu Tyr Phe Ile Asn Arg Ser Trp Glu Trp Ser Thr Tyr Asn Thr	
391 396 401 406	
gaa atg ctg atg tct gag ctg agt cct gaa gac cag aga gta ttc aac	1423

Glu Met Leu Met Ser	Glu Leu Ser Pro Glu Asp Gln Arg Val Phe Asn	
407	412 417 422	
ttt gac gtg cgc cag ttg aac tgg ttg gaa tac att gaa aat tat gtt		1471
Phe Asp Val Arg Gln Leu Asn Trp Leu Glu Tyr Ile Glu Asn Tyr Val		
423 428 433 438		
ttg gga gtt aaa aaa tac tta ttg aaa gag gat atg gct ggg atc cca		1519
Leu Gly Val Lys Lys Tyr Leu Leu Lys Glu Asp Met Ala Gly Ile Pro		
439 444 449 454		
aaa gca aag caa cgc tta aaa agg ctc cga aat att cac tac ctc ttt		1567
Lys Ala Lys Gln Arg Leu Lys Arg Leu Arg Asn Ile His Tyr Leu Phe		
455 460 465 470		
aat act gcc ctc ttc ctt atc gcc tgg cgc ctt ctc att gca aga tct		1615
Asn Thr Ala Leu Phe Leu Ile Ala Trp Arg Leu Leu Ile Ala Arg Ser		
471 476 481 486		
cag atg gct cgg aat gtc tgg ttc ttc att gta agc ttc tgt tat aaa		1663
Gln Met Ala Arg Asn Val Trp Phe Phe Ile Val Ser Phe Cys Tyr Lys		
487 492 497 502		
ttc ctc tcc tac ttt aga gca tcc agg cac ggt tca aag ttt aag agc		1711
Phe Leu Ser Tyr Phe Arg Ala Ser Arg His Gly Ser Lys Phe Lys Ser		
503 508 513 518		
att tag gccatcgct tttatctgga acctctcaga tacctctaaa acagcaaact		1767
Ile *		
519		
gtgattctca agattagaaa gtaacaagga atatgcccac actgtcaaat gtcacctgtt		1827
atgtattcgt ccctattcct taactatgta tttttatttc agtgagagaa ggaaagttgt		1887
aaactagccc atagtcacct atatttttagg gaaaaaaatc caaattgttt cctaacattc		1947
tattttatgc ccttgcgtat taaacgtgaa agtactocca cttttctttt aaaaaaaaaa		2007
aaaaaaa		2014

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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (115)..(1233)

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catttctgat ttatttgcac ccttgaagag catctgtaga agaggaagta aaag atg	117

ggg	gtg	aaa	aca	ttt	act	cat	agc	tcc	tct	tcc	cac	agc	cag	gaa	atg	165
Gly	Val	Lys	Thr	Phe	Thr	His	Ser	Ser	Ser	Ser	His	Ser	Gln	Glu	Met	
2					7					12					17	
ctt	gga	aag	cta	aat	atg	ctg	cga	aat	gat	gga	cat	ttt	tgt	gat	atc	213
Leu	Gly	Lys	Leu	Asn	Met	Leu	Arg	Asn	Asp	Gly	His	Phe	Cys	Asp	Ile	
18					23					28					33	
act	att	cgt	gtc	cag	gac	aaa	atc	ttc	cgg	gca	cat	aag	gtg	gta	cta	261
Thr	Ile	Arg	Val	Gln	Asp	Lys	Ile	Phe	Arg	Ala	His	Lys	Val	Val	Leu	
34					39					44					49	
gca	gct	tgc	agt	gat	ttc	ttt	cgc	acc	aaa	ctt	gta	ggc	caa	gcc	gag	309
Ala	Ala	Cys	Ser	Asp	Phe	Phe	Arg	Thr	Lys	Leu	Val	Gly	Gln	Ala	Glu	
50					55					60					65	
gat	gag	aac	aag	aat	gtg	ttg	gat	ctg	cat	cat	gtt	aca	gtg	act	ggc	357
Asp	Glu	Asn	Lys	Asn	Val	Leu	Asp	Leu	His	His	Val	Thr	Val	Thr	Gly	
66					71					76					81	
ttt	ata	cct	ctt	tta	gaa	tat	gct	tac	aca	gcc	act	cta	tca	att	aac	405
Phe	Ile	Pro	Leu	Leu	Glu	Tyr	Ala	Tyr	Thr	Ala	Thr	Leu	Ser	Ile	Asn	
82					87					92					97	
aca	gaa	aat	att	att	gat	gtt	cta	gca	gca	gcc	agc	tat	atg	caa	atg	453
Thr	Glu	Asn	Ile	Ile	Asp	Val	Leu	Ala	Ala	Ala	Ser	Tyr	Met	Gln	Met	
98					103					108					113	
ttc	agt	gtt	gcc	agc	acc	tgc	tca	gag	ttc	atg	aaa	tca	agc	att	tta	501
Phe	Ser	Val	Ala	Ser	Thr	Cys	Ser	Glu	Phe	Met	Lys	Ser	Ser	Ile	Leu	
114					119					124					129	
tgg	aat	aca	ccc	aac	agc	caa	cct	gaa	aag	ggg	cta	gat	gct	gga	caa	549
Trp	Asn	Thr	Pro	Asn	Ser	Gln	Pro	Glu	Lys	Gly	Leu	Asp	Ala	Gly	Gln	
130					135					140					145	
gaa	aat	aat	tct	aac	tgc	aat	ttt	act	tct	cga	gat	ggg	agc	att	tct	597
Glu	Asn	Asn	Ser	Asn	Cys	Asn	Phe	Thr	Ser	Arg	Asp	Gly	Ser	Ile	Ser	
146					151					156					161	
ccc	gtg	tcc	tca	gag	tgc	aga	gtg	gta	gaa	aga	acc	att	cct	gtc	tgc	645
Pro	Val	Ser	Ser	Glu	Cys	Arg	Val	Val	Glu	Arg	Thr	Ile	Pro	Val	Cys	
162					167					172					177	
cga	gaa	tcc	cgg	aga	aag	cgc	aaa	agc	tac	att	gtt	atg	tct	cct	gaa	693
Arg	Glu	Ser	Arg	Arg	Lys	Arg	Lys	Ser	Tyr	Ile	Val	Met	Ser	Pro	Glu	
178					183					188					193	
agt	cct	gta	aag	tgt	ggc	aca	caa	aca	agc	tca	ccc	cag	gta	ttg	aat	741
Ser	Pro	Val	Lys	Cys	Gly	Thr	Gln	Thr	Ser	Ser	Pro	Gln	Val	Leu	Asn	
194					199					204					209	
tct																

210	215	220	225	
tta gct ttt cct tgg act ttt cct ttt gga att gat cga agg att cag				837
Leu Ala Phe Pro Trp Thr Phe Pro Phe Gly Ile Asp Arg Arg Ile Gln				
226	231	236	241	
cct gag aaa gtt aag caa gca gaa aat acc cgg act tta gaa tta cct				885
Pro Glu Lys Val Lys Gln Ala Glu Asn Thr Arg Thr Leu Glu Leu Pro				
242	247	252	257	
ggc cca tct gag acc ggt aga aga atg gct gat tat gtg act tgt gag				933
Gly Pro Ser Glu Thr Gly Arg Arg Met Ala Asp Tyr Val Thr Cys Glu				
258	263	268	273	
agc aca aaa act acc ttg cct tta ggt acc gaa gaa gat gtc cgg gtc				981
Ser Thr Lys Thr Thr Leu Pro Leu Gly Thr Glu Glu Asp Val Arg Val				
274	279	284	289	
aaa gta gaa aga tta agt gat gag gag gtc cat gag gaa gtg tcc cag				1029
Lys Val Glu Arg Leu Ser Asp Glu Glu Val His Glu Glu Val Ser Gln				
290	295	300	305	
cct gtc agt gca tct cag agt tcg ctg agt gat cag cag aca gtt cca				1077
Pro Val Ser Ala Ser Gln Ser Ser Leu Ser Asp Gln Gln Thr Val Pro				
306	311	316	321	
gga agt gaa caa gtc caa gag gac ctt ctg att agt cca cag tct tcc				1125
Gly Ser Glu Gln Val Gln Glu Asp Leu Leu Ile Ser Pro Gln Ser Ser				
322	327	332	337	
tct ata ggc tca gta gat gaa ggc gtt tct gag ggc ttg cct aca ctt				1173
Ser Ile Gly Ser Val Asp Glu Gly Val Ser Glu Gly Leu Pro Thr Leu				
338	343	348	353	
caa agc acg tct agc act aat gct cct ccg gat gat gat gat cgg tca				1221
Gln Ser Thr Ser Ser Thr Asn Ala Pro Pro Asp Asp Asp Asp Arg Ser				
354	359	364	369	
gta cta aca tag cat ttcgttacct cttaagggtt gtgtttacaa ctccaaattc				1276
Val Leu Thr *				
370				
aagcatttca tctcaagagt tgtagaagtt tattacaacc tcacttcagt atacttttca				1336
aagtaatgaa gtagcatcat cacattataa attagagtag ctatacaagg cttttttttt				1396
tccccagcat ttccaaaact acctagtccc attgctttta atcgtatctg taccaagtgt				1456
tggcaaaacta tgaaccacag gccaatcca gcctaccacc tttatttgta aatcaagtat				1516
tactggaaca caaccaggct catttgctga catattgttt gtggatggca gagttgagt				1576
gttgaaacag actgtatggt gtgcaaagtc agaatgtgtg ctgtacggac tgctgtgaaa				1636
aacatctgcc aaagtctgat ctgtataccc ataactccct cctgcttgat atttcccata				1696
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cttgtctgaa tcctgcttct ccagcctttc tcccatttca gtaagcatca tcattatccc 1816
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gcaggactgg gcggcctgtg tgggggtgtg agccgcggtg cccaaggctg cgccggcgag 180
gggaagccgc gcggccggcc ggccgactag ggtttgaaga ctgcttcatt ctgcctctag 240
taccagcggg ttctctgttc tgtgatcaat gtgattcaca ggaactcctt aagtaacaaa 300
cgaa atg agc cag ggg cgt gga aaa tat gac ttc tat att ggt ctg gga 349
Met Ser Gln Gly Arg Gly Lys Tyr Asp Phe Tyr Ile Gly Leu Gly
1 5 10
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Leu Ala Met Ser Ser Ser Ile Phe Ile Gly Gly Ser Phe Ile Leu Lys
16 21 26 31
aaa aag ggc ctc ctt cga ctt gcc agg aaa ggc tct atg aga gca ggt 445
Lys Lys Gly Leu Leu Arg Leu Ala Arg Lys Gly Ser Met Arg Ala Gly
32 37 42 47
caa ggt ggc cat gca tat ctt aag gaa tgg ttg tgg tgg gct gga ctg 493
Gln Gly Gly His Ala Tyr Leu Lys Glu Trp Leu Trp Trp Ala Gly Leu
48 53 58 63
ctg tca atg gga gct ggt gag gtg gcc aac ttc gct gcg tat gcg ttt 541

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Leu	Ser	Met	Gly	Ala	Gly	Glu	Val	Ala	Asn	Phe	Ala	Ala	Tyr	Ala	Phe	
64					69					74					79	
gca	cca	gcc	act	cta	gtg	act	cca	cta	gga	gct	ctc	agc	gtg	cta	gta	589
Ala	Pro	Ala	Thr	Leu	Val	Thr	Pro	Leu	Gly	Ala	Leu	Ser	Val	Leu	Val	
80					85					90					95	
agt	gcc	att	ctt	tct	tca	tac	ttt	ctc	aat	gaa	aga	ctt	aat	ctt	cat	637
Ser	Ala	Ile	Leu	Ser	Ser	Tyr	Phe	Leu	Asn	Glu	Arg	Leu	Asn	Leu	His	
96					101					106					111	
ggg	aaa	att	ggg	tgt	ttg	cta	agt	att	cta	gga	tct	aca	ggt	atg	gtc	685
Gly	Lys	Ile	Gly	Cys	Leu	Leu	Ser	Ile	Leu	Gly	Ser	Thr	Val	Met	Val	
112					117					122					127	
att	cat	gct	cca	aag	gaa	gag	gag	att	gag	act	tta	aat	gaa	atg	tct	733
Ile	His	Ala	Pro	Lys	Glu	Glu	Glu	Ile	Glu	Thr	Leu	Asn	Glu	Met	Ser	
128					133					138					143	
cac	aag	cta	ggt	gat	cca	ggt	ttt	gtg	gtc	ttt	gca	acc	ctt	gtg	gtc	781
His	Lys	Leu	Gly	Asp	Pro	Gly	Phe	Val	Val	Phe	Ala	Thr	Leu	Val	Val	
144					149					154					159	
att	gtg	gcc	ttg	ata	tta	atc	ttc	gtg	gtg	ggt	cct	cgc	cat	gga	cag	829
Ile	Val	Ala	Leu	Ile	Leu	Ile	Phe	Val	Val	Gly	Pro	Arg	His	Gly	Gln	
160					165					170					175	
aca	aac	att	ctt	gtg	tac	ata	aca	atc	tgc	tct	gta	atc	ggc	gcg	ttt	877
Thr	Asn	Ile	Leu	Val	Tyr	Ile	Thr	Ile	Cys	Ser	Val	Ile	Gly	Ala	Phe	
176					181					186					191	
tca	gtc	tcc	tgt	gtg	aag	ggc	ctg	ggc	att	gct	atc	aag	gag	ctg	ttt	925
Ser	Val	Ser	Cys	Val	Lys	Gly	Leu	Gly	Ile	Ala	Ile	Lys	Glu	Leu	Phe	
192					197					202					207	
gca	ggg	aag	cct	gtg	ctg	cgg	cat	ccc	ctg	gct	tgg	att	ctg	ctg	ctg	973
Ala	Gly	Lys	Pro	Val	Leu	Arg	His	Pro	Leu	Ala	Trp	Ile	Leu	Leu	Leu	
208					213					218					223	
agc	ctc	atc	gtc	tgt	gtg	agc	aca	cag	att	aat	tac	cta	aat	agg	gcc	1021
Ser	Leu	Ile	Val	Cys	Val	Ser	Thr	Gln	Ile	Asn	Tyr	Leu	Asn	Arg	Ala	
224					229					234					239	
ctg	gat	ata	ttc	aac	act	tcc	att	gtg	act	cca	ata	tat	tat	gta	ttc	1069
Leu	Asp	Ile	Phe	Asn	Thr	Ser	Ile	Val	Thr	Pro	Ile	Tyr	Tyr	Val	Phe	
240					245					250					255	
ttt	aca	aca	tca	ggt	tta	act	tgt	tca	gct	att	ctt	ttt	aag	gag	tgg	1117
Phe	Thr	Thr	Ser	Val	Leu	Thr	Cys	Ser	Ala	Ile	Leu	Phe	Lys	Glu	Trp	
256					261					266					271	
caa	gat	atg	cct	ggt	gac	gat	gtc	att	ggt							

288	293	298	303	
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Phe Ser Leu Ala Ser Leu Pro Val Ser Phe Arg Lys Asp Glu Lys Ala				
304	309	314	319	
atg aat ggc aat ctc tct aat atg tat gaa gtt ctt aat aat aat gaa				1309
Met Asn Gly Asn Leu Ser Asn Met Tyr Glu Val Leu Asn Asn Asn Glu				
320	325	330	335	
gaa agc tta acc tgt gga atc gaa caa cac act ggt gaa aat gtc tcc				1357
Glu Ser Leu Thr Cys Gly Ile Glu Gln His Thr Gly Glu Asn Val Ser				
336	341	346	351	
cga aga aat gga aat ctg aca gct ttt taa g aaaggtgtaa ttaaaggtta				1408
Arg Arg Asn Gly Asn Leu Thr Ala Phe *				
352	357			
atctgtgatt gttatgaagt gaatttgaat atcatcagaa tgtgtctgaa aaaacattgt				1468
cctcaaataa tgttctttaa aggcaatctt tataaagatt tcactaattt ggaccaagaa				1528
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ggttcctgggt cccggagtgg tcggagcccg ccagtgggca ggcagctctt gctcacaggc	180
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Met Ala Leu Gln Val Glu	
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ctg gta ccc acc ggg gag atc atc cgc gtg gtt cat ccc cac agg ccc	282
Leu Val Pro Thr Gly Glu Ile Ile Arg Val Val His Pro His Arg Pro	
7 12 17 22	
tgc aag ctt gcc ctg ggc agt gac ggg gtt cgg gtg acc atg gag agt	330
Cys Lys Leu Ala Leu Gly Ser Asp Gly Val Arg Val Thr Met Glu Ser	
23 28 33 38	
gcg ctc acc gcc cgt gac cgg gtg ggg gtg cag gat ttc gtg ctg ctg	378
Ala Leu Thr Ala Arg Asp Arg Val Gly Val Gln Asp Phe Val Leu Leu	
39 44 49 54	
gag aac ttc acc agc gag gcc gcc ttc atc gag aac ctg cgg cgg cga	426
Glu Asn Phe Thr Ser Glu Ala Ala Phe Ile Glu Asn Leu Arg Arg Arg	
55 60 65 70	
ttt cgg gag aat ctc atc tac acc tac att ggc ccc gtc ctg gtc tct	474
Phe Arg Glu Asn Leu Ile Tyr Thr Tyr Ile Gly Pro Val Leu Val Ser	
71 76 81 86	
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Val Asn Pro Tyr Arg Asp Leu Gln Ile Tyr Ser Arg Gln His Met Glu	
87 92 97 102	
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Arg Tyr Arg Gly Val Ser Phe Tyr Glu Val Pro Pro His Leu Phe Ala	
103 108 113 118	
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Val Ala Asp Thr Val Tyr Arg Ala Leu Arg Thr Glu Arg Arg Asp Gln	
119 124 129 134	
gct gtg atg atc tct ggg gag agc ggg gca ggc aag acc gag gcc acc	666
Ala Val Met Ile Ser Gly Glu Ser Gly Ala Gly Lys Thr Glu Ala Thr	
135 140 145 150	
aag aag ctg ctg cag ttc tat gca gag acc tgc cca gcc ccc caa cgc	714

Lys	Lys	Leu	Leu	Gln	Phe	Tyr	Ala	Glu	Thr	Cys	Pro	Ala	Pro	Gln	Arg	
151					156					161					166	
gga	ggt	gcc	gtg	cgg	gac	cgg	ctg	cta	cag	agc	aac	ccg	gtg	ctg	gag	762
Gly	Gly	Ala	Val	Arg	Asp	Arg	Leu	Leu	Gln	Ser	Asn	Pro	Val	Leu	Glu	
167					172					177					182	
gcc	ttt	gga	aat	gcc	aag	acc	ctc	cgg	aac	gat	aac	tcc	agc	agg	ttc	810
Ala	Phe	Gly	Asn	Ala	Lys	Thr	Leu	Arg	Asn	Asp	Asn	Ser	Ser	Arg	Phe	
183					188					193					198	
ggg	aag	tac	atg	gat	gtg	cag	ttt	gac	ttc	aag	ggt	gcc	ccc	gtg	ggt	858
Gly	Lys	Tyr	Met	Asp	Val	Gln	Phe	Asp	Phe	Lys	Gly	Ala	Pro	Val	Gly	
199					204					209					214	
ggc	cac	atc	ctc	agt	tac	ctc	ctg	gaa	aag	tca	cga	gtg	gtg	cac	cag	906
Gly	His	Ile	Leu	Ser	Tyr	Leu	Leu	Glu	Lys	Ser	Arg	Val	Val	His	Gln	
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Asn	His	Gly	Glu	Arg	Asn	Phe	His	Ile	Phe	Tyr	Gln	Leu	Leu	Glu	Gly	
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247					252					257					262	
agc	tac	ctg	tac	ctg	gtg	aag	ggc	cag	tgt	gcc	aaa	gtc	tcc	tcc	atc	1050
Ser	Tyr	Leu	Tyr	Leu	Val	Lys	Gly	Gln	Cys	Ala	Lys	Val	Ser	Ser	Ile	
263					268					273					278	
aac	gac	aag	agt	gac	tgg	aag	gtc	gtc	agg	aag	gct	ctg	aca	gtc	att	1098
Asn	Asp	Lys	Ser	Asp	Trp	Lys	Val	Val	Arg	Lys	Ala	Leu	Thr	Val	Ile	
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Asp	Phe	Thr	Glu	Asp	Glu	Val	Glu	Asp	Leu	Leu	Ser	Ile	Val	Ala	Ser	
295					300					305					310	
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Val	Leu	His	Leu	Gly	Asn	Ile	His	Phe	Ala	Ala	Asn	Glu	Glu	Ser	Asn	
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Ala	Gln	Val	Thr	Thr	Glu	Asn	Gln	Leu	Lys	Tyr	Leu	Thr	Arg	Leu	Leu	
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Ser	Val	Glu	Gly	Ser	Thr	Leu	Arg	Glu	Ala	Leu	Thr	His	Arg	Lys	Ile	
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Ile	Ala	Lys	Gly	Glu	Glu	Leu	Leu	Ser	Pro	Leu	Asn	Leu	Glu	Gln	Ala	
359					364					369					374	
gcg	tac	gca	cga	gac	gcc	ctc	gcc	aag	gct	gtg	tac	agc	cgc	act	ttt	1386
Ala	Tyr	Ala	Arg	Asp	Ala	Leu	Ala	Lys	Ala	Val	Tyr	Ser	Arg	Thr	Phe	

375	380	385	390	
acc tgg ctc gtc ggg aag atc aac agg tgc ctg gcc tcc aag gac gtg				1434
Thr Trp Leu Val Gly Lys Ile Asn Arg Ser Leu Ala Ser Lys Asp Val				
391	396	401	406	
gag agc ccc agc tgg cgg agc acc acg gtt ctc ggg ctc ctg gat att				1482
Glu Ser Pro Ser Trp Arg Ser Thr Thr Val Leu Gly Leu Leu Asp Ile				
407	412	417	422	
tat ggc ttc gaa gtg ttt cag cat aac agc ttt gag cag ttc tgc atc				1530
Tyr Gly Phe Glu Val Phe Gln His Asn Ser Phe Glu Gln Phe Cys Ile				
423	428	433	438	
aat tac tgc aac gaa aag ctg cag cag ctc ttc atc gaa ctc ccg ctc				1578
Asn Tyr Cys Asn Glu Lys Leu Gln Gln Leu Phe Ile Glu Leu Pro Leu				
439	444	449	454	
aag tgc gag cag gag gaa tac gag gca gag ggc atc gcg tgg gaa ccc				1626
Lys Ser Glu Gln Glu Glu Tyr Glu Ala Glu Gly Ile Ala Trp Glu Pro				
455	460	465	470	
gtc cag tat ttc aac aac aaa atc atc tgt gat ctg gtg gag gag aag				1674
Val Gln Tyr Phe Asn Asn Lys Ile Ile Cys Asp Leu Val Glu Glu Lys				
471	476	481	486	
ttt aag ggc atc atc tgc att ttg gat gag gag tgt ctg cgc ccc ggg				1722
Phe Lys Gly Ile Ile Ser Ile Leu Asp Glu Glu Cys Leu Arg Pro Gly				
487	492	497	502	
gag gcc aca gac ctg acc ttc ctg gag aag ctg gag gat act gtc aag				1770
Glu Ala Thr Asp Leu Thr Phe Leu Glu Lys Leu Glu Asp Thr Val Lys				
503	508	513	518	
cac cat cca cac ttc ctg acg cac aag ctg gct gac cag cgg acc agg				1818
His His Pro His Phe Leu Thr His Lys Leu Ala Asp Gln Arg Thr Arg				
519	524	529	534	
aaa tct ctg ggc cga ggg gaa ttc cgc ctt ctg cac tat gcg ggg gag				1866
Lys Ser Leu Gly Arg Gly Glu Phe Arg Leu Leu His Tyr Ala Gly Glu				
535	540	545	550	
gtg acc tac agc gtg acc ggg ttt ctg gac aaa aac aat gac ctt ctc				1914
Val Thr Tyr Ser Val Thr Gly Phe Leu Asp Lys Asn Asn Asp Leu Leu				
551	556	561	566	
ttc cgg aac ctt aag gag acc atg tgt agc tca aag aat ccc att atg				1962
Phe Arg Asn Leu Lys Glu Thr Met Cys Ser Ser Lys Asn Pro Ile Met				
567	572	577	582	
agc cag tgc ttc gac cgg agc gag ctc agt gac aag aag cgg cca gag				2010
Ser Gln Cys Phe Asp Arg Ser Glu Leu Ser Asp Lys Lys Arg Pro Glu				
583	588	593	598	
acg gtc gcc acc cag ttc aag atg agc ctc ctg cag ctg gtg gag atc				2058
Thr Val Ala Thr Gln Phe Lys Met Ser Leu Leu Gln Leu Val Glu Ile				
599	604	609	614	

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615					620					625					630	
gcc	aaa	cag	ccc	ggc	cgc	ttt	gac	gag	gtg	ctg	atc	cgc	cac	cag	gtg	2154
Ala	Lys	Gln	Pro	Gly	Arg	Phe	Asp	Glu	Val	Leu	Ile	Arg	His	Gln	Val	
631					636					641					646	
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Lys	Tyr	Leu	Gly	Leu	Leu	Glu	Asn	Leu	Arg	Val	Arg	Arg	Ala	Gly	Phe	
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Cys	Pro	Glu	Thr	Trp	Pro	Thr	Trp	Ala	Gly	Arg	Pro	Gln	Asp	Gly	Val	
679					684					689					694	
gct	gtg	ctg	gtc	cga	cac	ctg	ggc	tac	aag	cca	gaa	gag	tac	aag	atg	2346
Ala	Val	Leu	Val	Arg	His	Leu	Gly	Tyr	Lys	Pro	Glu	Glu	Tyr	Lys	Met	
695					700					705					710	
ggc	agg	acc	aag	atc	ttc	atc	cgc	ttc	ccc	aag	acc	ctg	ttt	gcc	aca	2394
Gly	Arg	Thr	Lys	Ile	Phe	Ile	Arg	Phe	Pro	Lys	Thr	Leu	Phe	Ala	Thr	
711					716					721					726	
gag	gat	gcc	ctg	gag	gtc	cgg	cgg	cag	agc	ctg	gcc	aca	aag	atc	caa	2442
Glu	Asp	Ala	Leu	Glu	Val	Arg	Arg	Gln	Ser	Leu	Ala	Thr	Lys	Ile	Gln	
727					732					737					742	
gct	gcc	tgg	agg	ggc	ttt	cac	tgg	cgg	cag	aaa	ttc	ctc	cgg	gtg	aag	2490
Ala	Ala	Trp	Arg	Gly	Phe	His	Trp	Arg	Gln	Lys	Phe	Leu	Arg	Val	Lys	
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Arg	Ser	Ala	Ile	Cys	Ile	Gln	Ser	Trp	Trp	Arg	Gly	Thr	Leu	Gly	Arg	
759					764					769					774	
agg	aag	gca	gcc	aag	agg	aag	tgg	gcg	gca	cag	acc	atc	cgg	cgg	ctc	2586
Arg	Lys	Ala	Ala	Lys	Arg	Lys	Trp	Ala	Ala	Gln	Thr	Ile	Arg	Arg	Leu	
775					780					785					790	
atc	cga	ggc	ttc	atc	ctg	cgc	cac	gcc	ccc	cgc	tgc	ccc	gag	aac	gcc	2634
Ile	Arg	Gly	Phe	Ile	Leu	Arg	His	Ala	Pro	Arg	Cys	Pro	Glu	Asn	Ala	
791					796					801					806	
ttc	ttc	ctg	gac	cat	gtg	cgc	acc	tct	ttt	ttg	cta	aac	ctg	agg	cgg	2682
Phe	Phe	Leu	Asp	His	Val	Arg	Thr	Ser	Phe	Leu	Leu	Asn	Leu	Arg	Arg	
807					812					817					822	
cag	ctg	ccc	cgg	aat	gtc	ctg	gac	acc	tcg	tgg	ccc	acg	ccc	cca	cct	2730
Gln	Leu	Pro	Arg	Asn	Val	Leu	Asp	Thr	Ser	Trp	Pro	Thr	Pro	Pro	Pro	
823					828					833					838	

Arg *
1063

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cctccccttc ccagttacca aagactcgaa cttccagaca gggacccagg gacaccccga 3518
agcccacctg caatctccca cctcctgccc atccctctct tgagggagca gcagggggcca 3578
ggagctaccc caggagtggg ccaggccggg ccacagcaat aggaaagcca gggccagagc 3638
gagccatgcc agccctactg ccgatgccaa atatttgaga gaagggaact tttgctgagg 3698
ttttctctga gggttttttg atgctttata ggaaactatt ttttaaaaaa agccatttcc 3758
cacccaagga cacagtggat gtgttttccc tgactccagc agggcaagga atgtagccga 3818
gaggtttgtg gggctgggct ctgggtgccct cttccctggc caggacacct ctcctcctga 3878
ttcccttggc cttgccatat gcaattgcat atggcaaggc caagtggagg atgagagggc 3938
ggtgtcccag gctgagcaga cagccagagg gaggagtact tggtcaggct gagggactgc 3998
gccagctgaa aggtggaggc aaggggagcag aggccagcag gggctgcctg gagcctgggg 4058
actctacccc aaccctagca gcgggaagag agggggcggg gccctcacct gctcaaactc 4118
gtcagtgatg gtcttgggct cctcgtgcct ctggaaccac atcatgtact tgggtgtggaa 4178
tcgccatgac tggtcttttag ggcc 4202
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<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (184)..(1503)

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taccgggtccg gaattcccgg gtcgaccac gcgtccgctc cgccccacga gcacctgttt 120
ccgagcgggag agcgcggggc gttttctttc ctgggtgtccc gtcgcggtt gggacccggc 180
aag atg ggc aag aag ggc aag aag gag aag aag ggc cgc ggc gcg gag 228
Met Gly Lys Lys Gly Lys Lys Glu Lys Lys Gly Arg Gly Ala Glu
1 5 10
aag acg gcc gcc aag atg gag aag aag gtg tct aag cgc tcg cgg aag 276
Lys Thr Ala Ala Lys Met Glu Lys Lys Val Ser Lys Arg Ser Arg Lys
16 21 26 31
gag gag gaa gac ctg gaa gcg ctc ata gcc cat ttc cag aca ctc gat 324
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Glu Glu Glu Asp Leu Glu Ala Leu Ile Ala His Phe Gln Thr Leu Asp	
32 37 42 47	
gcc aag agg act cag act gtg gaa ctt ccg tgc ccc cca ccc tca cca	372
Ala Lys Arg Thr Gln Thr Val Glu Leu Pro Cys Pro Pro Pro Ser Pro	
48 53 58 63	
agg tta aat gcc tcc ctc tcg gtt cat cct gag aaa gat gag tta atc	420
Arg Leu Asn Ala Ser Leu Ser Val His Pro Glu Lys Asp Glu Leu Ile	
64 69 74 79	
ctt ttt gga ggt gaa tat ttc aac ggc caa aaa act ttt ttg tat aac	468
Leu Phe Gly Gly Glu Tyr Phe Asn Gly Gln Lys Thr Phe Leu Tyr Asn	
80 85 90 95	
gag ctc tat gtc tac aat atc aga aag gac acc tgg acc aaa gtt gac	516
Glu Leu Tyr Val Tyr Asn Ile Arg Lys Asp Thr Trp Thr Lys Val Asp	
96 101 106 111	
atc ccc agt cca cct ccg agg cgc tgt gct cac cag gcg gtg gta gtg	564
Ile Pro Ser Pro Pro Pro Arg Arg Cys Ala His Gln Ala Val Val Val	
112 117 122 127	
cct caa ggt ggc gga cag ctg tgg gtc ttt gga ggg gag ttt gcc tct	612
Pro Gln Gly Gly Gly Gln Leu Trp Val Phe Gly Gly Glu Phe Ala Ser	
128 133 138 143	
ccc aac gga gag cag ttc tac cac tac aag gat ctc tgg gtc ctg cat	660
Pro Asn Gly Glu Gln Phe Tyr His Tyr Lys Asp Leu Trp Val Leu His	
144 149 154 159	
ttg gcc acc aag acc tgg gaa caa gtc aaa tca aca ggc ggt cct tcg	708
Leu Ala Thr Lys Thr Trp Glu Gln Val Lys Ser Thr Gly Gly Pro Ser	
160 165 170 175	
ggt cgg agt gga cat cgg atg gtg gcc tgg aag aga caa ttg atc ctg	756
Gly Arg Ser Gly His Arg Met Val Ala Trp Lys Arg Gln Leu Ile Leu	
176 181 186 191	
ttt ggt ggc ttc cat gaa agt aca cgg gat tac atc tac tac aac gac	804
Phe Gly Gly Phe His Glu Ser Thr Arg Asp Tyr Ile Tyr Tyr Asn Asp	
192 197 202 207	
gtg tat gcc ttt aat ctg gac acc ttc aca tgg agc aag ctg tcc ccg	852
Val Tyr Ala Phe Asn Leu Asp Thr Phe Thr Trp Ser Lys Leu Ser Pro	
208 213 218 223	
tca ggg acg ggg ccc aca ccc aga tca ggc tgc cag atg tcc gtc act	900
Ser Gly Thr Gly Pro Thr Pro Arg Ser Gly Cys Gln Met Ser Val Thr	
224 229 234 239	
ccc cag ggc ggc atc gtc gtc tat ggg ggc tac tcg aaa cag aga gtt	948
Pro Gln Gly Gly Ile Val Val Tyr Gly Gly Tyr Ser Lys Gln Arg Val	
240 245 250 255	
aag aaa gac gtg gac aag ggc aca cgg cac tca gac atg ttc ctg ctg	996
Lys Lys Asp Val Asp Lys Gly Thr Arg His Ser Asp Met Phe Leu Leu	

256	261	266	271	
aag cca gag gac gga aga gaa gac aag tgg gtt tgg act cgg atg aac				1044
Lys Pro Glu Asp Gly Arg Glu Asp Lys Trp Val Trp Thr Arg Met Asn				
272	277	282	287	
cct tcg ggg gtc aag ccc acc cca cgg tct ggc ttt tcc gtg gcc atg				1092
Pro Ser Gly Val Lys Pro Thr Pro Arg Ser Gly Phe Ser Val Ala Met				
288	293	298	303	
gcc ccg aat cac cag aca ctg ttc ttc ggg ggt gtc tgt gac gag gaa				1140
Ala Pro Asn His Gln Thr Leu Phe Phe Gly Gly Val Cys Asp Glu Glu				
304	309	314	319	
gag gag gag agc ctg tcg ggc gag ttc ttc aac gat ctg tac ttc tac				1188
Glu Glu Glu Ser Leu Ser Gly Glu Phe Phe Asn Asp Leu Tyr Phe Tyr				
320	325	330	335	
gac gcc acc agg aac cgt tgg ttt gag gga cag ctg aag aaa ctc agg				1236
Asp Ala Thr Arg Asn Arg Trp Phe Glu Gly Gln Leu Lys Lys Leu Arg				
336	341	346	351	
agt ggc tgg agg aga cgg act cgg aag agg aca gtg agg agg ttg agg				1284
Ser Gly Trp Arg Arg Arg Thr Arg Lys Arg Thr Val Arg Arg Leu Arg				
352	357	362	367	
gcg ccg agg gtg ggg tcg acg acg aag aca gcg gag agg aga gcg gtg				1332
Ala Pro Arg Val Gly Ser Thr Thr Lys Thr Ala Glu Arg Arg Ala Val				
368	373	378	383	
cgg agg act gag agc ccc tgc cag ggg cgc ctg gca agt gct gtg ccc				1380
Arg Arg Thr Glu Ser Pro Cys Gln Gly Arg Leu Ala Ser Ala Val Pro				
384	389	394	399	
acg tcc gcc cag gac cca gcc gtg ttg agt gaa gct ctt ggg gcc agc				1428
Thr Ser Ala Gln Asp Pro Ala Val Leu Ser Glu Ala Leu Gly Ala Ser				
400	405	410	415	
gtg cgt cct gac gca cag gag aga gct gaa ggt ggg tgg ccc agg cca				1476
Val Arg Pro Asp Ala Gln Glu Arg Ala Glu Gly Gly Trp Pro Arg Pro				
416	421	426	431	
ggg tgt gaa ctt tct ccc atg gtt tag tctct gacgcggcac tgggccggaa				1528
Gly Cys Glu Leu Ser Pro Met Val *				
432	437			
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ttggacttga aacaagaaaa aaaaaaaaa				1616

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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (167)..(1405)

<400> 1042

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cctgggtctat cagagaaatc accacaatcc atttaa	aatga atttgataat cattctcgtt	120
tggcatagca tgaaacatag caaaggctat gttttagagg	cacaag atg acg aac	175
	Met Thr Asn	
	1	
tat cgc gtt gag agt agc agc gga cgg gcg gcg	cgc aag atg agg ctc	223
Tyr Arg Val Glu Ser Ser Ser Gly Arg Ala Ala	Arg Lys Met Arg Leu	
4 9 14 19		
gca tta atg gga cct gcg ttc att gcg gcg att	ggt tat atc gat ccc	271
Ala Leu Met Gly Pro Ala Phe Ile Ala Ala Ile	Gly Tyr Ile Asp Pro	
20 25 30 35		
ggt aac ttt gcg acc aat att cag gcg ggt gct	agc ttc ggc tat cag	319
Gly Asn Phe Ala Thr Asn Ile Gln Ala Gly Ala	Ser Phe Gly Tyr Gln	
36 41 46 51		
cta ctg tgg gtt gtc gtt tgg gcc aac ctg atg	gcg atg ctg att cag	367
Leu Leu Trp Val Val Val Trp Ala Asn Leu Met	Ala Met Leu Ile Gln	
52 57 62 67		
atc ctc tct gcc aaa cta ggg att gcc acc ggt	aaa aat ctg gcg gag	415
Ile Leu Ser Ala Lys Leu Gly Ile Ala Thr Gly	Lys Asn Leu Ala Glu	
68 73 78 83		
cag att cgc gat cac tat ccg cgt ccc gta gtg	tgg ttc tat tgg gtt	463
Gln Ile Arg Asp His Tyr Pro Arg Pro Val Val	Trp Phe Tyr Trp Val	
84 89 94 99		
cag gca gaa att att gcg atg gca acc gac ctg	gcg gaa ttt att ggt	511
Gln Ala Glu Ile Ile Ala Met Ala Thr Asp Leu	Ala Glu Phe Ile Gly	
100 105 110 115		
gcg gcg atc ggt ttt aaa ctc att ctt ggt gtt	tcg ttg ttg cag ggc	559
Ala Ala Ile Gly Phe Lys Leu Ile Leu Gly Val	Ser Leu Leu Gln Gly	
116 121 126 131		
gcg gtg ctg acg ggg atc gcg act ttc ctg att	tta atg ctg caa cgt	607
Ala Val Leu Thr Gly Ile Ala Thr Phe Leu Ile	Leu Met Leu Gln Arg	
132 137 142 147		
cgc ggg caa aaa ccg ctg gag aaa gtg att ggc	ggg tta ctg ttg ttt	655
Arg Gly Gln Lys Pro Leu Glu Lys Val Ile Gly	Gly Leu Leu Leu Phe	
148 153 158 163		
gtt gcc gcg gct tac att gtc gag ttg att ttc	tcc cag cct aac ctg	703
Val Ala Ala Ala Tyr Ile Val Glu Leu Ile Phe	Ser Gln Pro Asn Leu	
164 169 174 179		

gcg cag ctg ggt aaa gga atg gtg atc ccg agt tta cct act tcg gaa	751
Ala Gln Leu Gly Lys Gly Met Val Ile Pro Ser Leu Pro Thr Ser Glu	
180 185 190 195	
gcg gtc ttc ctg gca gca ggc gtg tta ggg gcg acg att atg ccg cat	799
Ala Val Phe Leu Ala Ala Gly Val Leu Gly Ala Thr Ile Met Pro His	
196 201 206 211	
gtg att tat ttg cac tcc tcg ctc act cag cat tta cat ggc ggt tcg	847
Val Ile Tyr Leu His Ser Ser Leu Thr Gln His Leu His Gly Gly Ser	
212 217 222 227	
cgt caa caa cgt tat tcc gcc acc aaa tgg gat gtg gct atc gcc atg	895
Arg Gln Gln Arg Tyr Ser Ala Thr Lys Trp Asp Val Ala Ile Ala Met	
228 233 238 243	
act att gcc ggt ttt gtc aat ctg gcg atg atg gct aca gct gcg gcg	943
Thr Ile Ala Gly Phe Val Asn Leu Ala Met Met Ala Thr Ala Ala Ala	
244 249 254 259	
gcg ttc cac ttt tcc ggt cat act ggt gtt gcc gat ctt gat gag gct	991
Ala Phe His Phe Ser Gly His Thr Gly Val Ala Asp Leu Asp Glu Ala	
260 265 270 275	
tat ctg acg ctg caa ccg ctg tta agc cac gct gcg gca acg gtc ttt	1039
Tyr Leu Thr Leu Gln Pro Leu Leu Ser His Ala Ala Ala Thr Val Phe	
276 281 286 291	
gga tta agc ctg gtt gct gcg ggg ctg tct tca acg gtg gtg ggg aca	1087
Gly Leu Ser Leu Val Ala Ala Gly Leu Ser Ser Thr Val Val Gly Thr	
292 297 302 307	
ctg gcg ggg cag gtg gtg atg cag ggc ttc att cgc ttt cat atc ccg	1135
Leu Ala Gly Gln Val Val Met Gln Gly Phe Ile Arg Phe His Ile Pro	
308 313 318 323	
ctg tgg gtg cgt cgt aca gtc acc atg ttg ccg tca ttt att gtc att	1183
Leu Trp Val Arg Arg Thr Val Thr Met Leu Pro Ser Phe Ile Val Ile	
324 329 334 339	
ctg atg gga tta gat ccg aca cgg att ctg gtt atg agt cag gta ctg	1231
Leu Met Gly Leu Asp Pro Thr Arg Ile Leu Val Met Ser Gln Val Leu	
340 345 350 355	
tta agt ttt ggt atc gct ctg gcg ctg gtt cca ctg ctg att ttc acc	1279
Leu Ser Phe Gly Ile Ala Leu Ala Leu Val Pro Leu Leu Ile Phe Thr	
356 361 366 371	
agt gac agc aag ttg atg ggc gat ctg gtg aac agc aaa cgc gta aaa	1327
Ser Asp Ser Lys Leu Met Gly Asp Leu Val Asn Ser Lys Arg Val Lys	
372 377 382 387	
cag aca ggc tgg gtg att gtg gtg ctg gtc gtg gcg ctg aat atc tgg	1375
Gln Thr Gly Trp Val Ile Val Val Leu Val Val Ala Leu Asn Ile Trp	
388 393 398 403	

ttg ttg gtg ggg acg gcg ctg gga ttg tag t tgaatgagcg tcgcatctgg 1426
 Leu Leu Val Gly Thr Ala Leu Gly Leu *
 404 409
 cactattggc ggatgcggcg taaacgcctt atccgcccta cgcgttaaag agccgggttg 1486
 taggcctgat aagacgcact agcgtcgcat caggcattgt gctccattgg cggacgcgtt 1546
 taatggcggt gcccatgacc ccggcctttt ccgcgatgat cgtcacgata gcgccagcct 1606
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 tgacgccacc aacgggttttt gcgccactcc 1696

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 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (4)..(462)

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 acc caa aaa aag aga tct ctc gag gat ccg aat tcg cgg ccg cgt cga 96
 Thr Gln Lys Lys Arg Ser Leu Glu Asp Pro Asn Ser Arg Pro Arg Arg
 16 21 26 31
 cct ttg aca gag tgc aag acg atg act tgc aaa atg tcg cag ctg gaa 144
 Pro Leu Thr Glu Cys Lys Thr Met Thr Cys Lys Met Ser Gln Leu Glu
 32 37 42 47
 cgc aac ata gag acc atc atc aac acc ttc cac caa tac tct gtg aag 192
 Arg Asn Ile Glu Thr Ile Ile Asn Thr Phe His Gln Tyr Ser Val Lys
 48 53 58 63
 ctg ggg cac cca gac acc ctg aac cag ggg gaa ttc aaa gag ctg gtg 240
 Leu Gly His Pro Asp Thr Leu Asn Gln Gly Glu Phe Lys Glu Leu Val
 64 69 74 79
 cga aaa gat ctg caa aat ttt ctc aag aag gag aat aag aat gaa aag 288
 Arg Lys Asp Leu Gln Asn Phe Leu Lys Lys Glu Asn Lys Asn Glu Lys
 80 85 90 95
 gtc ata gaa cac atc atg gag gac ctg gac aca aat gca gac aag cag 336
 Val Ile Glu His Ile Met Glu Asp Leu Asp Thr Asn Ala Asp Lys Gln
 96 101 106 111
 ctg agc ttc gag gag ttc atc atg ctg atg gcg agg cta acc tgg gcc 384
 Leu Ser Phe Glu Glu Phe Ile Met Leu Met Ala Arg Leu Thr Trp Ala

112	117	122	127	
tcc cac gag aag atg	cac gag ggt gac gag	ggc cct ggc cac cac	cat	432
Ser His Glu Lys Met	His Glu Gly Asp Glu	Gly Pro Gly His His	His	
128	133	138	143	
aag cca ggc ctc ggg	gag ggc acc ccc taa	g accacagtgg ccaagatcac		483
Lys Pro Gly Leu Gly	Glu Gly Thr Pro *			
144	149			
agtggccacg gccacggcca	cagtcatggt ggccacggcc	acagccacta atcaggaggc		543
caggccacccc tgcctctacc	caaccagggc cccggggcct	gttatgtcaa actgtcttgg		603
ctgtgggggct aggggctggg	gccaaataaa gtctcttcct	cctaaaaaaaa aagtcgacgc		663
ggccgcgaat tcggatcctc	gagagatctc tttttttggg	tttgggtgggg tatcttcac		723
atcgaataga tagttatata	catcagccct tcgatgggag	aggggaacc		771
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gcgggacctg caggagaaag	gcgatcctgt ggctgggaat	gtgacccac	ggccagaaga	180
ggacccggta tctcaggtc	cgagcccctg gacagcagcc	ccaggcccag ctggcc		236
atg gcc ctg tgc ctg	aag cag gtg ttc gcc aag	gac aag acg ttc cgg		284
Met Ala Leu Cys Leu Lys	Gln Val Phe Ala Lys	Asp Lys Thr Phe Arg		
1	5	10	15	
ccg cgg aag cgc ttt	gag ccg ggc aca cag	cgc ttt gag ctg tac	aag	332
Pro Arg Lys Arg Phe	Glu Pro Gly Thr Gln Arg	Phe Glu Leu Tyr Lys		
17	22	27	32	
aag gca cag gcc tct	ctc aag tcg ggc ctg	gac ctg cgc agt gtg	gtg	380
Lys Ala Gln Ala Ser	Leu Lys Ser Gly Leu Asp	Leu Arg Ser Val Val		
33	38	43	48	
agg cta cca ccc ggg	gag aac atc gac gac	tgg atc gcc gtg cac	gtg	428
Arg Leu Pro Pro Gly	Glu Asn Ile Asp Asp	Trp Ile Ala Val His	Val	
49	54	59	64	
gtg gac ttc ttc aac	cgc atc aac ctc atc	tac ggc act atg	gcg gag	476

Val Asp Phe Phe Asn Arg Ile Asn Leu Ile Tyr Gly Thr Met Ala Glu	
65 70 75 80	
cgc tgc agt gag acc agc tgc ccg gtc atg gcc ggc ggg ccc cgc tac	524
Arg Cys Ser Glu Thr Ser Cys Pro Val Met Ala Gly Gly Pro Arg Tyr	
81 86 91 96	
gag tac cgc tgg cag gac gag cgc cag tac cgg cgg ccc gcc aag ctc	572
Glu Tyr Arg Trp Gln Asp Glu Arg Gln Tyr Arg Arg Pro Ala Lys Leu	
97 102 107 112	
tct gcg ccg cgc tat atg gca ttg ctc atg gac tgg atc gaa ggc ctc	620
Ser Ala Pro Arg Tyr Met Ala Leu Leu Met Asp Trp Ile Glu Gly Leu	
113 118 123 128	
atc aac gac gaa gag gtc ttt ccc acg cgt gtt gga gtt ccc ttc cct	668
Ile Asn Asp Glu Glu Val Phe Pro Thr Arg Val Gly Val Pro Phe Pro	
129 134 139 144	
aag aac ttc cag cag gtc tgc acc aag atc ctg acc cgc ctc ttc cga	716
Lys Asn Phe Gln Gln Val Cys Thr Lys Ile Leu Thr Arg Leu Phe Arg	
145 150 155 160	
gtc ttt gtc cat gtc tac atc cac cac ttc gat agc atc ctc agc atg	764
Val Phe Val His Val Tyr Ile His His Phe Asp Ser Ile Leu Ser Met	
161 166 171 176	
ggg gca gag gcg cac gtc aac acc tgc tac aag cac ttc tac tac ttc	812
Gly Ala Glu Ala His Val Asn Thr Cys Tyr Lys His Phe Tyr Tyr Phe	
177 182 187 192	
atc cgc gag ttc agt ctg gtg gac cag cgg gag ctg gag cca ctg agg	860
Ile Arg Glu Phe Ser Leu Val Asp Gln Arg Glu Leu Glu Pro Leu Arg	
193 198 203 208	
gag atg aca gag cgg atc tgc cac tga gccc ggtctggact tttttggcca	912
Glu Met Thr Glu Arg Ile Cys His *	
209 214	
tcagatggac gatctgaaca taggggtggct ggagagggg acccccagga gcctgaagga	972
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 cacaactgtt tctgctttga gcaataattt ctaacctgag gccaacatgt cccactgccc 2472
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 <212> DNA
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<220>
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 ggatcgcggc ccgaatggcg gccgacaagg gcccgcgggc tggacctcg tgcgagctg 120
 cc atg gcc cag tgg agg aag aag aaa ggg ctc cgg aag cgc cga ggc 167
 Met Ala Gln Trp Arg Lys Lys Lys Gly Leu Arg Lys Arg Arg Gly
 1 5 10

gcg gcc tcc cag gcc cgc ggc agc gac tcg gag gac ggc gag ttt gag	215
Ala Ala Ser Gln Ala Arg Gly Ser Asp Ser Glu Asp Gly Glu Phe Glu	
16 21 26 31	
atc cag gcg gaa gat gac gcc cgg gcc cgg aag ctg gga cct gga aga	263
Ile Gln Ala Glu Asp Asp Ala Arg Ala Arg Lys Leu Gly Pro Gly Arg	
32 37 42 47	
ccc ctg ccc acc ttc ccc acc tcg gaa tgc acc tcg gat gtg gag ccg	311
Pro Leu Pro Thr Phe Pro Thr Ser Glu Cys Thr Ser Asp Val Glu Pro	
48 53 58 63	
gac acc cgg gag atg gtg cgt gcc cag aac aag aag aag aag tct	359
Asp Thr Arg Glu Met Val Arg Ala Gln Asn Lys Lys Lys Lys Ser	
64 69 74 79	
gga ggc ttc cag tcc atg ggc ctg agc tac ccg gtg ttc aaa ggc atc	407
Gly Gly Phe Gln Ser Met Gly Leu Ser Tyr Pro Val Phe Lys Gly Ile	
80 85 90 95	
atg aag aag ggg tac aag gtg cca aca ccc atc cag agg aag acc atc	455
Met Lys Lys Gly Tyr Lys Val Pro Thr Pro Ile Gln Arg Lys Thr Ile	
96 101 106 111	
ccg gtg atc ttg gat ggc aag gac gtg gtg gcc atg gcc cgg acg ggc	503
Pro Val Ile Leu Asp Gly Lys Asp Val Val Ala Met Ala Arg Thr Gly	
112 117 122 127	
agt ggc aag aca gcc tgc ttc ctc ctc cca atg ttc gag cgg ctc aag	551
Ser Gly Lys Thr Ala Cys Phe Leu Leu Pro Met Phe Glu Arg Leu Lys	
128 133 138 143	
acc cac agt gcc cag acc ggg gcc cgc gcc ctc atc ctc tcg ccg acc	599
Thr His Ser Ala Gln Thr Gly Ala Arg Ala Leu Ile Leu Ser Pro Thr	
144 149 154 159	
cga gag ctg gcc ctg cag acc ctg aag ttc act aag gag cta ggc aag	647
Arg Glu Leu Ala Leu Gln Thr Leu Lys Phe Thr Lys Glu Leu Gly Lys	
160 165 170 175	
ttc act ggc ctc aag act gcc ctg atc ctg ggt gga gac agg atg gaa	695
Phe Thr Gly Leu Lys Thr Ala Leu Ile Leu Gly Gly Asp Arg Met Glu	
176 181 186 191	
gac cag ttt gca gcc ctg cac gaa aat ccc gac ata att att gcc acg	743
Asp Gln Phe Ala Ala Leu His Glu Asn Pro Asp Ile Ile Ile Ala Thr	
192 197 202 207	
ccc gga cgg ttg gtg cat gtg gct gtg gaa atg agc ctg aag ctg cag	791
Pro Gly Arg Leu Val His Val Ala Val Glu Met Ser Leu Lys Leu Gln	
208 213 218 223	
agt gtg gaa tac gtg gtg ttc gat gaa gct gac cgg ctt ttt gaa atg	839
Ser Val Glu Tyr Val Val Phe Asp Glu Ala Asp Arg Leu Phe Glu Met	
224 229 234 239	
ggt ttc gca gag cag ctg cag gag atc aac gcc cgc ctc ccc ggg ggc	887

Gly	Phe	Ala	Glu	Gln	Leu	Gln	Glu	Ile	Asn	Ala	Arg	Leu	Pro	Gly	Gly		
240					245					250					255		
cac	cag	acg	gtg	ctg	ttc	tcc	gcc	acg	ctg	ccc	aaa	ctg	ctg	gtg	gaa	935	
His	Gln	Thr	Val	Leu	Phe	Ser	Ala	Thr	Leu	Pro	Lys	Leu	Leu	Val	Glu		
256					261					266					271		
ttt	gcc	cgg	gct	ggc	ctc	acg	gag	ccc	gtg	ctc	atc	cgg	ctt	gac	gtg	983	
Phe	Ala	Arg	Ala	Gly	Leu	Thr	Glu	Pro	Val	Leu	Ile	Arg	Leu	Asp	Val		
272					277					282					287		
gat	acc	aag	ctc	aac	gag	cag	ctg	aag	acc	tcc	ttc	ttc	ctc	gtg	cgg	1031	
Asp	Thr	Lys	Leu	Asn	Glu	Gln	Leu	Lys	Thr	Ser	Phe	Phe	Leu	Val	Arg		
288					293					298					303		
gag	gac	acc	aag	gct	gcc	gtg	ctg	ctc	cac	ctg	ctg	cac	aac	gtg	gtg	1079	
Glu	Asp	Thr	Lys	Ala	Ala	Val	Leu	Leu	His	Leu	Leu	His	Asn	Val	Val		
304					309					314					319		
cgg	ccc	cag	gac	cag	acc	gtg	gtg	ttt	gtg	gcc	acg	aag	cac	cac	gcc	1127	
Arg	Pro	Gln	Asp	Gln	Thr	Val	Val	Phe	Val	Ala	Thr	Lys	His	His	Ala		
320					325					330					335		
gag	tac	ctc	act	gag	ctg	ctg	acg	acc	cag	cgg	gtg	agc	tgc	gcc	cac	1175	
Glu	Tyr	Leu	Thr	Glu	Leu	Leu	Thr	Thr	Gln	Arg	Val	Ser	Cys	Ala	His		
336					341					346					351		
atc	tac	agt	gcc	cta	gac	cgc	aca	gcc	cgc	aag	atc	aat	ctc	gcc	aaa	1223	
Ile	Tyr	Ser	Ala	Leu	Asp	Pro	Thr	Ala	Arg	Lys	Ile	Asn	Leu	Ala	Lys		
352					357					362					367		
ttc	acg	ctt	ggc	aag	tgc	tcc	act	ctc	att	gtg	act	gac	ctg	gcc	gcc	1271	
Phe	Thr	Leu	Gly	Lys	Cys	Ser	Thr	Leu	Ile	Val	Thr	Asp	Leu	Ala	Ala		
368					373					378					383		
cga	ggc	ctg	gac	atc	ccg	ctg	ctg	gac	aat	gtc	atc	aac	tac	agc	ttc	1319	
Arg	Gly	Leu	Asp	Ile	Pro	Leu	Leu	Asp	Asn	Val	Ile	Asn	Tyr	Ser	Phe		
384					389					394					399		
ccc	gcc	aag	ggc	aaa	ctc	ttc	ctg	cac	cgc	gtg	ggc	cgt	gtg	gct	cgg	1367	
Pro	Ala	Lys	Gly	Lys	Leu	Phe	Leu	His	Arg	Val	Gly	Arg	Val	Ala	Arg		
400					405					410					415		
gct	ggc	cga	agt	ggc	aca	gcc	tac	tcc	ttg	gtg	gcc	cct	gat	gaa	atc	1415	
Ala	Gly	Arg	Ser	Gly	Thr	Ala	Tyr	Ser	Leu	Val	Ala	Pro	Asp	Glu	Ile		
416					421					426					431		
ccc	tac	ctg	ctg	gat	ctg	cac	ctg	ttc	ctg	ggc	cgc	tcc	ctc	acc	ctc	1463	
Pro	Tyr	Leu	Leu	Asp	Leu	His	Leu	Phe	Leu	Gly	Arg	Ser	Leu	Thr	Leu		
432					437					442					447		
gcc	cga	ccc	ctc	aag	gag	ccc	tca	ggt	gtg	gcc	ggt	gtg	gat	ggc	atg	1511	
Ala	Arg	Pro	Leu	Lys	Glu	Pro	Ser	Gly	Val	Ala	Gly	Val	Asp	Gly	Met		
448					453					458					463		
ctg	ggt	cgg	gtg	cca	cag	agt	gtg	gtg	gac	gag	gag	gac	agt	ggt	ctg	1559	
Leu	Gly	Arg	Val	Pro	Gln	Ser	Val	Val	Asp	Glu	Glu	Asp	Ser	Gly	Leu		

464	469	474	479	
cag agc acc ctg gag gca tcg ctg gag cta cgg ggc ctg gcc cgc gtt				1607
Gln Ser Thr Leu Glu Ala Ser Leu Glu Leu Arg Gly Leu Ala Arg Val				
480	485	490	495	
gct gat aac gcc cag cag cag tat gtg cgc tca cgc ccg gcg ccc tcg				1655
Ala Asp Asn Ala Gln Gln Gln Tyr Val Arg Ser Arg Pro Ala Pro Ser				
496	501	506	511	
cct gag tcc atc aag agg gcc aag gag atg gac ctt gtg ggg ctg ggc				1703
Pro Glu Ser Ile Lys Arg Ala Lys Glu Met Asp Leu Val Gly Leu Gly				
512	517	522	527	
ctg cac ccc ctc ttc agc tcg cgt ttt gag gag gag gag ctg cag cgg				1751
Leu His Pro Leu Phe Ser Ser Arg Phe Glu Glu Glu Glu Leu Gln Arg				
528	533	538	543	
ctg agg ctg gtg gac agc ata aag aac tac cgc tcc cgg gcg gac att				1799
Leu Arg Leu Val Asp Ser Ile Lys Asn Tyr Arg Ser Arg Ala Asp Ile				
544	549	554	559	
ttc tca gag gtc gtg ggc cgg aag cgg cag cgg tca gga ccc aac agg				1847
Phe Ser Glu Val Val Gly Arg Lys Arg Gln Arg Ser Gly Pro Asn Arg				
560	565	570	575	
gga gcc aag agg cgg agg gag gag gcc cgg cag cgg gac cag gaa ttc				1895
Gly Ala Lys Arg Arg Arg Glu Glu Ala Arg Gln Arg Asp Gln Glu Phe				
576	581	586	591	
tac atc ccc tac cgg ccc aag gac ttt gac agc gag cgg ggc ctg agc				1943
Tyr Ile Pro Tyr Arg Pro Lys Asp Phe Asp Ser Glu Arg Gly Leu Ser				
592	597	602	607	
atc agc ggg gaa ggg gga gcc ttt gag cag cag gca gct ggc gct gtc				1991
Ile Ser Gly Glu Gly Gly Ala Phe Glu Gln Gln Ala Ala Gly Ala Val				
608	613	618	623	
ctg gac ttg atg ggg gat gaa gcc cag aac ctg acg agg ggc cgg cag				2039
Leu Asp Leu Met Gly Asp Glu Ala Gln Asn Leu Thr Arg Gly Arg Gln				
624	629	634	639	
cag ctc aag tgg gac cgt aag aag aag cgg ttt gtg gga cag tca gga				2087
Gln Leu Lys Trp Asp Arg Lys Lys Lys Arg Phe Val Gly Gln Ser Gly				
640	645	650	655	
cag gaa gac aag aag aag att aag aca gag agc ggc cgc tac atc agc				2135
Gln Glu Asp Lys Lys Lys Ile Lys Thr Glu Ser Gly Arg Tyr Ile Ser				
656	661	666	671	
agc tcc tac aag cga gac ctc tat cag aag tgg aaa cag aaa cag aaa				2183
Ser Ser Tyr Lys Arg Asp Leu Tyr Gln Lys Trp Lys Gln Lys Gln Lys				
672	677	682	687	
att gat gat cgt gac tcg gac gaa gaa ggg gca tct gac cgg cga ggc				2231
Ile Asp Asp Arg Asp Ser Asp Glu Glu Gly Ala Ser Asp Arg Arg Gly				
688	693	698	703	

cca gag cga aga ggt ggg aag cga gac cgt ggc caa gca ggt gca tcc	2279
Pro Glu Arg Arg Gly Gly Lys Arg Asp Arg Gly Gln Ala Gly Ala Ser	
704 709 714 719	
cgg ccc cac gcc cca ggc acc cct gca ggc cga gtc cgc ccg gaa ctc	2327
Arg Pro His Ala Pro Gly Thr Pro Ala Gly Arg Val Arg Pro Glu Leu	
720 725 730 735	
aag acc aag cag cag atc ctg aag cag cgg cgc cgg gcc cag aag ctg	2375
Lys Thr Lys Gln Gln Ile Leu Lys Gln Arg Arg Arg Ala Gln Lys Leu	
736 741 746 751	
cac ttc ctg cag cgt ggt ggc ctc aag cag ctc tct gcc cgc aac cgc	2423
His Phe Leu Gln Arg Gly Gly Leu Lys Gln Leu Ser Ala Arg Asn Arg	
752 757 762 767	
cgc cgc gtc cag gag ctg cag cag ggc gcc ttc ggc cgg ggt gcc cgc	2471
Arg Arg Val Gln Glu Leu Gln Gln Gly Ala Phe Gly Arg Gly Ala Arg	
768 773 778 783	
tcc aag aag ggc aag atg cgg aag agg atg tga ggaccagg acccagcccc	2522
Ser Lys Lys Gly Lys Met Arg Lys Arg Met *	
784 789 794	
gtggctcctt gattggcctt aggggtgggca tcagcagacg ttcccgtgca ccactgtgtg	2582
cctggccctg tgctggggcac tggggggcact ccctgcagga gccatcatct gtgaaaagga	2642
gcactgtatg gccacagaag ggcagcagct gcgtcagcct aagacagaga catttgaaca	2702
gggccttgaa ggggtgtgcag gagttcgcca gcaaagccag gcaggccaag acttgagttg	2762
gcaactcagc tgctgctgct tccatgtgtt ctgggttcag aggtcatggc tgcaccggtc	2822
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gttccaacgg acactccctc tggaatgtca tgagaattaa aaactggggc ataagggaag	180

aagatggctg agaatggagc ctcggtttct atgtctgtaa aacaactgcc aggaactcct	240
gccaccgcca cgggtccccc atg gcc cac ata ccc agt ggg ggt gcc cca gca	292
Met Ala His Ile Pro Ser Gly Gly Ala Pro Ala	
1 5	
gcg ggg gca gcc ccc atg ggc ccc cag tat tgc gtg tgc aag gtg gag	340
Ala Gly Ala Ala Pro Met Gly Pro Gln Tyr Cys Val Cys Lys Val Glu	
12 17 22 27	
ctg tca gtg agt ggc cag aac cta ctg gac cgg gat gtt acc tcc aag	388
Leu Ser Val Ser Gly Gln Asn Leu Leu Asp Arg Asp Val Thr Ser Lys	
28 33 38 43	
tcc gac ccc ttc tgt gtc ctc ttt aca gag aac aat ggc aga tgg atc	436
Ser Asp Pro Phe Cys Val Leu Phe Thr Glu Asn Asn Gly Arg Trp Ile	
44 49 54 59	
gag tac gac agg aca gaa acc gcg atc aac aac ctc aac ccc gcc ttc	484
Glu Tyr Asp Arg Thr Glu Thr Ala Ile Asn Asn Leu Asn Pro Ala Phe	
60 65 70 75	
tcc aag aag ttc gtg ctt gac tac cac ttc gag gag gta cag aag ctc	532
Ser Lys Lys Phe Val Leu Asp Tyr His Phe Glu Glu Val Gln Lys Leu	
76 81 86 91	
aag ttc gcg ctc ttt gac cag gac aag tcc agt atg cgg ctg gac gag	580
Lys Phe Ala Leu Phe Asp Gln Asp Lys Ser Ser Met Arg Leu Asp Glu	
92 97 102 107	
cat gac ttc ctg ggc cag ttc tcc tgc agc ctg ggc acg atc gtc tcc	628
His Asp Phe Leu Gly Gln Phe Ser Cys Ser Leu Gly Thr Ile Val Ser	
108 113 118 123	
agc aag aag atc act agg cct ctg ctg ctg ctg aat gac aag cct gcg	676
Ser Lys Lys Ile Thr Arg Pro Leu Leu Leu Leu Asn Asp Lys Pro Ala	
124 129 134 139	
ggg aag ggc ttg att acg atc gct gcc cag gag ctg tcc gac aac cgc	724
Gly Lys Gly Leu Ile Thr Ile Ala Ala Gln Glu Leu Ser Asp Asn Arg	
140 145 150 155	
gtc atc aca cta agc ctg gcg ggc agg agg ctg gac aag aag gac ctc	772
Val Ile Thr Leu Ser Leu Ala Gly Arg Arg Leu Asp Lys Lys Asp Leu	
156 161 166 171	
ttt ggg aag tca gac ccc ttt ctg gag ttt tat aag cca gga gac gat	820
Phe Gly Lys Ser Asp Pro Phe Leu Glu Phe Tyr Lys Pro Gly Asp Asp	
172 177 182 187	
ggc aag tgg atg ctg gtc cac agg act gag gtg atc aag tac aca ctg	868
Gly Lys Trp Met Leu Val His Arg Thr Glu Val Ile Lys Tyr Thr Leu	
188 193 198 203	
gac cct gtg tgg aag cca ttc aca gtg ccc ttg gtg tcc ctg tgt gat	916
Asp Pro Val Trp Lys Pro Phe Thr Val Pro Leu Val Ser Leu Cys Asp	

204	209	214	219	
ggg gac atg gag aag ccc atc cag gtc atg tgc tac gac tat gac aat				964
Gly Asp Met Glu Lys Pro Ile Gln Val Met Cys Tyr Asp Tyr Asp Asn				
220	225	230	235	
gac ggg ggc cat gac ttc atc ggc gag ttc cag acc tca gtg tca cag				1012
Asp Gly Gly His Asp Phe Ile Gly Glu Phe Gln Thr Ser Val Ser Gln				
236	241	246	251	
atg tgt gag gct cga gac agc gtc ccg ctg gag ttc gag tgc atc aac				1060
Met Cys Glu Ala Arg Asp Ser Val Pro Leu Glu Phe Glu Cys Ile Asn				
252	257	262	267	
ccc aag aag cag agg aag aag aag aac tat aaa aac tcg ggc atc atc				1108
Pro Lys Lys Gln Arg Lys Lys Lys Asn Tyr Lys Asn Ser Gly Ile Ile				
268	273	278	283	
atc ctg cga tcc tgc aag ata aac cga gac tac tcc ttc ctt gac tac				1156
Ile Leu Arg Ser Cys Lys Ile Asn Arg Asp Tyr Ser Phe Leu Asp Tyr				
284	289	294	299	
atc ctg gga ggc tgc cag ctc atg ttc acc gtt gga ata gac ttt aca				1204
Ile Leu Gly Gly Cys Gln Leu Met Phe Thr Val Gly Ile Asp Phe Thr				
300	305	310	315	
gcc tcc aac ggg aat ccc ctc gac cct tcc tct ttg cac tat atc aac				1252
Ala Ser Asn Gly Asn Pro Leu Asp Pro Ser Ser Leu His Tyr Ile Asn				
316	321	326	331	
cct atg ggc acc aac gaa tat ctg tcg gcc atc tgg gct gtt ggg cag				1300
Pro Met Gly Thr Asn Glu Tyr Leu Ser Ala Ile Trp Ala Val Gly Gln				
332	337	342	347	
atc att cag gac tac gac agt gat aag atg ttt cca gct ctg gga ttc				1348
Ile Ile Gln Asp Tyr Asp Ser Asp Lys Met Phe Pro Ala Leu Gly Phe				
348	353	358	363	
ggg gcc cag tta ccc cca gac tgg aag gtc tcc cat gag ttt gcc atc				1396
Gly Ala Gln Leu Pro Pro Asp Trp Lys Val Ser His Glu Phe Ala Ile				
364	369	374	379	
aac ttc aac ccc acc aac ccc ttc tgc tca ggt gtg gat ggt att gcc				1444
Asn Phe Asn Pro Thr Asn Pro Phe Cys Ser Gly Val Asp Gly Ile Ala				
380	385	390	395	
cag gcg tac tca gct tgc ctg ccc cac atc cgc ttc tac ggt cct acc				1492
Gln Ala Tyr Ser Ala Cys Leu Pro His Ile Arg Phe Tyr Gly Pro Thr				
396	401	406	411	
aat ttc tcc ccc atc gtc aac cac gtg gcc cgg ttt gcg gcc cag gcc				1540
Asn Phe Ser Pro Ile Val Asn His Val Ala Arg Phe Ala Ala Gln Ala				
412	417	422	427	
aca caa cag cgg acg gcc acg cag tac ttc atc ctc ctc atc atc acg				1588
Thr Gln Gln Arg Thr Ala Thr Gln Tyr Phe Ile Leu Leu Ile Ile Thr				
428	433	438	443	

gac ggg gtc atc agt gac atg gag gag aca cgg cat gcc gtg gtg cag	1636
Asp Gly Val Ile Ser Asp Met Glu Glu Thr Arg His Ala Val Val Gln	
444 449 454 459	
gct tcc aag ctg ccc atg tcc atc atc atc gtg ggc gtg ggc aat gcg	1684
Ala Ser Lys Leu Pro Met Ser Ile Ile Ile Val Gly Val Gly Asn Ala	
460 465 470 475	
gac ttc gct gcc atg gag ttc ctg gat ggg gac agc cgc atg ctg cgc	1732
Asp Phe Ala Ala Met Glu Phe Leu Asp Gly Asp Ser Arg Met Leu Arg	
476 481 486 491	
tcc cac acg ggg gag gag gca gcc cgc gat att gtg cag ttc gtt ccc	1780
Ser His Thr Gly Glu Glu Ala Ala Arg Asp Ile Val Gln Phe Val Pro	
492 497 502 507	
ttt cga gag ttc cgc aac gca gca aaa gag acc ttg gcc aaa gct gtg	1828
Phe Arg Glu Phe Arg Asn Ala Ala Lys Glu Thr Leu Ala Lys Ala Val	
508 513 518 523	
ctg gcg gag ctg ccc caa caa gtt gtg cag tat ttc aag cat aaa aac	1876
Leu Ala Glu Leu Pro Gln Gln Val Val Gln Tyr Phe Lys His Lys Asn	
524 529 534 539	
ctg ccc ccc acc aac tcg gag ccc gcc tga g ctccagtgcc cagcagcagc	1927
Leu Pro Pro Thr Asn Ser Glu Pro Ala *	
540 545	
atgtcagctg agcctcctgc cctccccag gaacatgcac gctcactctg cttccttgtg	1987
gggtggccttt ttttaccgat cccctttttt atttttttaca accggacctc caccctcaac	2047
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ctggcttcct ctctcctct cccaccttt gccattctta agtattgaat gtactttgta	2167
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gac gcc acg agg aag aag ccg aag ctg aag ccc ggg aag tcg ctg ccg	973
Asp Ala Thr Arg Lys Lys Pro Lys Leu Lys Pro Gly Lys Ser Leu Pro	
205 210 215 220	
ctg ggt gtg gag gag ctg ggg cag ctg cca ccc gtt gag ggt cct ggg	1021
Leu Gly Val Glu Glu Leu Gly Gln Leu Pro Pro Val Glu Gly Pro Gly	
221 226 231 236	
ggc cgc cct ctc cgc aag tcc ttc cgc cgg gag ctg ggc ggg act gca	1069
Gly Arg Pro Leu Arg Lys Ser Phe Arg Arg Glu Leu Gly Gly Thr Ala	
237 242 247 252	
aac gcc gcc ttg cgc cga gag tct cag ggc tcc ctc aac tcc tcc gcc	1117
Asn Ala Ala Leu Arg Arg Glu Ser Gln Gly Ser Leu Asn Ser Ser Ala	
253 258 263 268	
agc ctg gac ctt ggc ttc cta gcc ttc gtc agc agc aaa tct gag agc	1165
Ser Leu Asp Leu Gly Phe Leu Ala Phe Val Ser Ser Lys Ser Glu Ser	
269 274 279 284	
cac cgg aag agc ctt ggg agc acg gag ggt gaa agt gaa agc cgg cca	1213
His Arg Lys Ser Leu Gly Ser Thr Glu Gly Glu Ser Glu Ser Arg Pro	
285 290 295 300	
ggg aag tac tgc tgt gtg tac ctg ccc gat ggc aca gcc tcc ttg gcc	1261
Gly Lys Tyr Cys Cys Val Tyr Leu Pro Asp Gly Thr Ala Ser Leu Ala	
301 306 311 316	
ctg gcc aga cct ggc ctc acc atc cga gac atg ctg gca ggg atc tgt	1309
Leu Ala Arg Pro Gly Leu Thr Ile Arg Asp Met Leu Ala Gly Ile Cys	
317 322 327 332	
gag aaa cga ggc ctc tct cta cct gac atc aag gtc tac ctg gtg ggc	1357
Glu Lys Arg Gly Leu Ser Leu Pro Asp Ile Lys Val Tyr Leu Val Gly	
333 338 343 348	
aat gaa cag aag gcc ctg gtc ctg gat cag gac tgc acc gtg ctg gcg	1405
Asn Glu Gln Lys Ala Leu Val Leu Asp Gln Asp Cys Thr Val Leu Ala	
349 354 359 364	
gat cag gaa gtg cgg ctg gaa aac agg atc acc ttc gag ctg gag ctg	1453
Asp Gln Glu Val Arg Leu Glu Asn Arg Ile Thr Phe Glu Leu Glu Leu	
365 370 375 380	
acg gcg ctg gag cgc gtg gta cga atc tca gcc aag ccc acc aag cgg	1501
Thr Ala Leu Glu Arg Val Val Arg Ile Ser Ala Lys Pro Thr Lys Arg	
381 386 391 396	
ctg cag gag gcg ctg cag ccc att ctg gag aag cac ggc ttg agc ccg	1549
Leu Gln Glu Ala Leu Gln Pro Ile Leu Glu Lys His Gly Leu Ser Pro	
397 402 407 412	

cta gag gtg gtg ctg cac cgg cca ggc gag aaa cag cct ctg gat ctg	1597
Leu Glu Val Val Leu His Arg Pro Gly Glu Lys Gln Pro Leu Asp Leu	
413 418 423 428	
ggg aag cta gtg agc tcg gtg gcg gcc cag aga ctg gtt ttg gac act	1645
Gly Lys Leu Val Ser Ser Val Ala Ala Gln Arg Leu Val Leu Asp Thr	
429 434 439 444	
ctt cca ggt gtg aag atc tcc aaa gcc cgt gac aaa tct ccc tgc cgc	1693
Leu Pro Gly Val Lys Ile Ser Lys Ala Arg Asp Lys Ser Pro Cys Arg	
445 450 455 460	
agc cag gtg agc gaa agg gct gcc cac cta gaa ctc agg ata agg cca	1741
Ser Gln Val Ser Glu Arg Ala Ala His Leu Glu Leu Arg Ile Arg Pro	
461 466 471 476	
ccc atc ccc ctc cag cgt ccc cca gtt ctc tgg tga aggt gcccagtagt	1791
Pro Ile Pro Leu Gln Arg Pro Pro Val Leu Trp *	
477 482 487	
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aaa tta cac tca gga gag aaa cct tac aat tgt gag gaa tgt gga agg Lys Leu His Ser Gly Glu Lys Pro Tyr Asn Cys Glu Glu Cys Gly Arg 252 257 262 267	1239
gcc ttc ata cat gct tcc cat ctt cag gaa cat cag aga att cat act Ala Phe Ile His Ala Ser His Leu Gln Glu His Gln Arg Ile His Thr 268 273 278 283	1287
ggg gag aaa cca ttc aaa tgt gat aca tgt ggt aag aac ttc cgt cgt	1335

Gly	Glu	Lys	Pro	Phe	Lys	Cys	Asp	Thr	Cys	Gly	Lys	Asn	Phe	Arg	Arg	
284					289					294					299	
aga	tca	gca	ctt	aat	aat	cat	tgc	atg	gtc	cac	aca	gga	gag	aaa	cca	1383
Arg	Ser	Ala	Leu	Asn	Asn	His	Cys	Met	Val	His	Thr	Gly	Glu	Lys	Pro	
300					305					310					315	
tac	aaa	tgt	gag	gac	tgt	ggg	aag	tgt	ttc	act	tgt	agc	tca	aac	ctt	1431
Tyr	Lys	Cys	Glu	Asp	Cys	Gly	Lys	Cys	Phe	Thr	Cys	Ser	Ser	Asn	Leu	
316					321					326					331	
cgt	atc	cat	caa	agg	gtc	cac	aca	gga	gag	aaa	cct	tac	aag	tgt	gaa	1479
Arg	Ile	His	Gln	Arg	Val	His	Thr	Gly	Glu	Lys	Pro	Tyr	Lys	Cys	Glu	
332					337					342					347	
gaa	tgt	ggg	aag	tgc	ttt	att	cag	cct	tca	caa	ttt	cag	gcc	cat	cgg	1527
Glu	Cys	Gly	Lys	Cys	Phe	Ile	Gln	Pro	Ser	Gln	Phe	Gln	Ala	His	Arg	
348					353					358					363	
aga	atc	cac	act	gga	gag	aaa	cca	tac	gta	tgt	aaa	gtg	tgt	ggg	aag	1575
Arg	Ile	His	Thr	Gly	Glu	Lys	Pro	Tyr	Val	Cys	Lys	Val	Cys	Gly	Lys	
364					369					374					379	
ggg	ttc	att	tac	agt	tca	agt	ttt	cag	gcc	cat	cag	gga	gtc	cac	act	1623
Gly	Phe	Ile	Tyr	Ser	Ser	Ser	Phe	Gln	Ala	His	Gln	Gly	Val	His	Thr	
380					385					390					395	
gga	gag	aag	cca	tac	aaa	tgc	aat	gag	tgt	ggg	aag	agc	ttc	aga	atg	1671
Gly	Glu	Lys	Pro	Tyr	Lys	Cys	Asn	Glu	Cys	Gly	Lys	Ser	Phe	Arg	Met	
396					401					406					411	
aaa	att	cat	tat	caa	gtg	cat	ctg	gta	gtc	cac	aca	ggg	gaa	aaa	ccc	1719
Lys	Ile	His	Tyr	Gln	Val	His	Leu	Val	Val	His	Thr	Gly	Glu	Lys	Pro	
412					417					422					427	
tat	aaa	tgt	gaa	gta	tgt	ggg	aaa	gcc	ttc	cgt	cag	agt	tca	tat	ctt	1767
Tyr	Lys	Cys	Glu	Val	Cys	Gly	Lys	Ala	Phe	Arg	Gln	Ser	Ser	Tyr	Leu	
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aaa	atc	cat	ctg	aaa	gca	cat	agt	gta	cag	aaa	cct	ttt	aag	tgt	gaa	1815
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Glu	Cys	Gly	Gln	Gly	Phe	Asn	Gln	Ser	Ser	Arg	Leu	Gln	Ile	His	Gln	
460					465					470					475	
ctg	atc	cat	acc	ggg	gag	aaa	cca	tac	aaa	tgt	gaa	gag	tgc	gga	aag	1911
Leu	Ile	His	Thr	Gly	Glu	Lys	Pro	Tyr	Lys	Cys	Glu	Glu	Cys	Gly	Lys	
476					481					486					491	
gga	ttt	agt	cgt	aga	gca	gat	ctt	aaa	att	cat	tgt	agg	atc	cac	aca	1959
Gly	Phe	Ser	Arg	Arg	Ala	Asp	Leu	Lys	Ile	His	Cys	Arg	Ile	His	Thr	
492					497					502					507	
ggg	gag	aaa	cca	tat	aat	tgt	gag	gag	tgt	ggg	aag	gtc	ttc	agt	cag	2007
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Ala Ser His Leu Leu Thr His Gln Arg Val His Ser Gly Glu Lys Pro				
524	529	534	539	
ttt aaa tgt gaa gag tgt ggg aag agc ttc agt cgg agt gca cac ctt				2103
Phe Lys Cys Glu Glu Cys Gly Lys Ser Phe Ser Arg Ser Ala His Leu				
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caa gcc cat caa aaa gtc cac act gga gaa aag cca tac aaa tgt ggg				2151
Gln Ala His Gln Lys Val His Thr Gly Glu Lys Pro Tyr Lys Cys Gly				
556	561	566	571	
gag tgt gga aag ggc ttc aag tgg agc ttg aac ctt gac atg cat cag				2199
Glu Cys Gly Lys Gly Phe Lys Trp Ser Leu Asn Leu Asp Met His Gln				
572	577	582	587	
agg gtg cac aca gga gaa aaa ccc tat aca tgt ggg gag tgt ggg aag				2247
Arg Val His Thr Gly Glu Lys Pro Tyr Thr Cys Gly Glu Cys Gly Lys				
588	593	598	603	
cac ttc agt cag gcc tca agt ctc caa ctt cat cag agt gtc cac aca				2295
His Phe Ser Gln Ala Ser Ser Leu Gln Leu His Gln Ser Val His Thr				
604	609	614	619	
gga gag aaa cca tac aaa tgt gat gta tgt ggt aaa gtc ttc agt cgg				2343
Gly Glu Lys Pro Tyr Lys Cys Asp Val Cys Gly Lys Val Phe Ser Arg				
620	625	630	635	
tct tca caa tta cag tat cat agg cga gtt cac act ggg gaa aaa cct				2391
Ser Ser Gln Leu Gln Tyr His Arg Arg Val His Thr Gly Glu Lys Pro				
636	641	646	651	
tac aaa tgt gag ata tgt ggt aag agg ttc agc tgg cga tca aat ctt				2439
Tyr Lys Cys Glu Ile Cys Gly Lys Arg Phe Ser Trp Arg Ser Asn Leu				
652	657	662	667	
gta agt cat cac aaa att cat gct gct ggt aca ttt tat gaa aat gat				2487
Val Ser His His Lys Ile His Ala Ala Gly Thr Phe Tyr Glu Asn Asp				
668	673	678	683	
gag aat agt aag aac atc aga gag ttg tca gag gga gga agt tct aca				2535
Glu Asn Ser Lys Asn Ile Arg Glu Leu Ser Glu Gly Gly Ser Ser Thr				
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Arg *				
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Pro Lys Arg Arg Ser Ala Arg Leu Ser Ala Lys Pro Pro Ala Lys Val
17 22 27 32

gaa gcg aag ccg aaa aag gca gca gcg aag gat aaa tct tca gac aaa 144
Glu Ala Lys Pro Lys Lys Ala Ala Ala Lys Asp Lys Ser Ser Asp Lys
33 38 43 48

aaa gtg caa aca aaa ggg aaa agg gga gca aag gga aaa cag gcc gaa 192
Lys Val Gln Thr Lys Gly Lys Arg Gly Ala Lys Gly Lys Gln Ala Glu
49 54 59 64

gtg gct aac caa gaa act aaa gaa gac tta cct gcg gaa aac ggg gaa 240
Val Ala Asn Gln Glu Thr Lys Glu Asp Leu Pro Ala Glu Asn Gly Glu
65 70 75 80

acg aag act gag gag gag aca cca gca ggg caa aag aga gcc tgg agt 288
Thr Lys Thr Glu Glu Glu Thr Pro Ala Gly Gln Lys Arg Ala Trp Ser
81 86 91 96

atc tct ccc ctg cta gag ctg tgc cgg cag tgg ctg cac ggc tgt ggc 336
Ile Ser Pro Leu Leu Glu Leu Cys Arg Gln Trp Leu His Gly Cys Gly
97 102 107 112

tcc cag tgg acc tcc tca gcc agt gac cta gtg acc cag ctc tca ggg 384
Ser Gln Trp Thr Ser Ser Ala Ser Asp Leu Val Thr Gln Leu Ser Gly
113 118 123 128

cac agt ccc gtt ttc ctg tcc atg ctt gga tgg atc cag ccg agc cgt 432
His Ser Pro Val Phe Leu Ser Met Leu Gly Trp Ile Gln Pro Ser Arg
129 134 139 144

cag ccg cag ctg cgc gct gct ccc ccg act cgc acc ccc tcg gcg aag 480
Gln Pro Gln Leu Arg Ala Ala Pro Pro Thr Arg Thr Pro Ser Ala Lys
145 150 155 160

cgc tgc att tta tgt aat ttt ctg ccg ggc tgc tgg ctt gtg ggg gat 528
Arg Cys Ile Leu Cys Asn Phe Leu Pro Gly Cys Trp Leu Val Gly Asp
161 166 171 176

gtg gct ggg tct cgg cag cct tca gcg ccg cag acg ctc cgg caa cgc 576
Val Ala Gly Ser Arg Gln Pro Ser Ala Pro Gln Thr Leu Arg Gln Arg
177 182 187 192

cag cat acg agg ccc ccg ccc cag gag cgc ggg tcc ggg cgg cgt tcc 624
Gln His Thr Arg Pro Pro Pro Gln Glu Arg Gly Ser Gly Arg Arg Ser

193	198	203	208	
cct ctg cgg gag gcg cgg cga gcc aat cct cac ttt aaa agc ttt cct				672
Pro Leu Arg Glu Ala Arg Arg Ala Asn Pro His Phe Lys Ser Phe Pro				
209	214	219	224	
gtc ctc gaa gcg agg ggt ctt ccg tgc ggg gca aga cgc act ggc ccc				720
Val Leu Glu Ala Arg Gly Leu Pro Cys Gly Ala Arg Arg Thr Gly Pro				
225	230	235	240	
aga cga ccg gtc cgt gaa atg acc ctt ccg agc gac ccg gag cgg gcg				768
Arg Arg Pro Val Arg Glu Met Thr Leu Pro Ser Asp Pro Glu Arg Ala				
241	246	251	256	
acc ttg ccc aac ccg cga ctc ggg gcc cct gcg gtc ccg cgt aga gga				816
Thr Leu Pro Asn Pro Arg Leu Gly Ala Pro Ala Val Pro Arg Arg Gly				
257	262	267	272	
ccc aga gct gta ctt cct tat cgc ccg gta cct atc ggc ggg ccc gtg				864
Pro Arg Ala Val Leu Pro Tyr Arg Pro Val Pro Ile Gly Gly Pro Val				
273	278	283	288	
tcg gag agc ggc cca ggt gct ggt gca gga gct gga gca gta cca gtt				912
Ser Glu Ser Gly Pro Gly Ala Gly Ala Gly Ala Gly Ala Val Pro Val				
289	294	299	304	
gtt gcc gaa gag att gga ctg gga ggg caa cga gca caa cag gag cta				960
Val Ala Glu Glu Ile Gly Leu Gly Gly Gln Arg Ala Gln Gln Glu Leu				
305	310	315	320	
cga gga gtt gcc tta gga ggg cca cta cag tgc att tct tcc agg gct				1008
Arg Gly Val Ala Leu Gly Gly Pro Leu Gln Cys Ile Ser Ser Arg Ala				
321	326	331	336	
gcc ctg gct tta gtg ttt ggg ccc tat gca gtt ggt gaa ggc cta tgg				1056
Ala Leu Ala Leu Val Phe Gly Pro Tyr Ala Val Gly Glu Gly Leu Trp				
337	342	347	352	
gaa aaa att gtg gtc ttg tcc aat aag cat gtg gct cct gat cat ctt				1104
Glu Lys Ile Val Val Leu Ser Asn Lys His Val Ala Pro Asp His Leu				
353	358	363	368	
ttg caa atc tgc cag cgc atc ggt cct atg ttg gat aaa gaa att cca				1152
Leu Gln Ile Cys Gln Arg Ile Gly Pro Met Leu Asp Lys Glu Ile Pro				
369	374	379	384	
ccc agt att tca aga gtc act tct tta ctt ggt gca gga agg cag tct				1200
Pro Ser Ile Ser Arg Val Thr Ser Leu Leu Gly Ala Gly Arg Gln Ser				
385	390	395	400	
ttg cta cgt aca gca aaa gac tgc agg cac aca gtt tgg aag ggc tct				1248
Leu Leu Arg Thr Ala Lys Asp Cys Arg His Thr Val Trp Lys Gly Ser				
401	406	411	416	
gcc ttt gct gct ctt cat aga gga aga cct cct gaa atg cca gtg aat				1296
Ala Phe Ala Ala Leu His Arg Gly Arg Pro Pro Glu Met Pro Val Asn				
417	422	427	432	

tat ggt tcc cca cca aat ctt gtg gag ata cat cga gga aaa caa ctc	1344
Tyr Gly Ser Pro Pro Asn Leu Val Glu Ile His Arg Gly Lys Gln Leu	
433 438 443 448	
aca ggg tgt tcc act ttt agt aca gca ttt cca gga act atg tat cag	1392
Thr Gly Cys Ser Thr Phe Ser Thr Ala Phe Pro Gly Thr Met Tyr Gln	
449 454 459 464	
cat ata aaa atg cac aga agg att ctc gga cat cta tct gct gtt tac	1440
His Ile Lys Met His Arg Arg Ile Leu Gly His Leu Ser Ala Val Tyr	
465 470 475 480	
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Cys Val Ala Phe Asp Arg Thr Gly His Arg Ile Phe Thr Gly Ser Asp	
481 486 491 496	
gac tgt ttg gta aag att tgg tca aca cat aat ggc cgc ttg tta tct	1536
Asp Cys Leu Val Lys Ile Trp Ser Thr His Asn Gly Arg Leu Leu Ser	
497 502 507 512	
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Thr Leu Arg Gly His Ser Ala Glu Ile Ser Asp Met Ala Val Asn Tyr	
513 518 523 528	
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Glu Asn Thr Met Ile Ala Ala Gly Ser Cys Asp Lys Ile Ile Arg Val	
529 534 539 544	
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Trp Cys Leu Arg Thr Cys Ala Pro Val Ala Val Leu Gln Gly His Thr	
545 550 555 560	
gga tca att aca tct tta cag ttt agc ccg atg gcc aaa ggc tct caa	1728
Gly Ser Ile Thr Ser Leu Gln Phe Ser Pro Met Ala Lys Gly Ser Gln	
561 566 571 576	
aga tac atg gtt tcc act ggt gct gat ggg aca gtt tgc ttt tgg caa	1776
Arg Tyr Met Val Ser Thr Gly Ala Asp Gly Thr Val Cys Phe Trp Gln	
577 582 587 592	
tgg gat tta gaa tcc tta aaa ttt agg ttc cta agt ggt agc aga gat	1824
Trp Asp Leu Glu Ser Leu Lys Phe Arg Phe Leu Ser Gly Ser Arg Asp	
593 598 603 608	
gga aca gca cgg att tgg aga ttt gag cag tta gaa tgg agg agc att	1872
Gly Thr Ala Arg Ile Trp Arg Phe Glu Gln Leu Glu Trp Arg Ser Ile	
609 614 619 624	
tta ttg gat atg gct acc aga atc tca ggg gac tta tct tcc gaa gag	1920
Leu Leu Asp Met Ala Thr Arg Ile Ser Gly Asp Leu Ser Ser Glu Glu	
625 630 635 640	
gaa agg ttt atg aaa cct aaa gta aca atg ata gct tgg aat caa aat	1968
Glu Arg Phe Met Lys Pro Lys Val Thr Met Ile Ala Trp Asn Gln Asn	
641 646 651 656	

gat agc att gtt gtc aca gct gtg aat gat cat gtc ctc aaa gtg tgg	2016
Asp Ser Ile Val Val Thr Ala Val Asn Asp His Val Leu Lys Val Trp	
657 662 667 672	
aat tct tac act gga caa ctg ctt cat aac tta atg gga cat gct gat	2064
Asn Ser Tyr Thr Gly Gln Leu Leu His Asn Leu Met Gly His Ala Asp	
673 678 683 688	
gaa gta ttt gtt ctg gag aca cat ccc ttt gat tcc aga att atg tta	2112
Glu Val Phe Val Leu Glu Thr His Pro Phe Asp Ser Arg Ile Met Leu	
689 694 699 704	
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Ser Ala Gly His Asp Gly Ser Ile Phe Ile Trp Asp Ile Thr Lys Gly	
705 710 715 720	
acc aag atg aaa cat tat ttt aat atg att gaa gga caa gga cat gga	2208
Thr Lys Met Lys His Tyr Phe Asn Met Ile Glu Gly Gln Gly His Gly	
721 726 731 736	
gct gtg ttt gac tgt aag ttt tca cag gat gga cag cat ttt gcc tgt	2256
Ala Val Phe Asp Cys Lys Phe Ser Gln Asp Gly Gln His Phe Ala Cys	
737 742 747 752	
aca gat tct cat ggg cac ctt ctg ata ttt ggt ttt gga tgc agc aaa	2304
Thr Asp Ser His Gly His Leu Leu Ile Phe Gly Phe Gly Cys Ser Lys	
753 758 763 768	
cca tat gaa aag att cct gat cag atg ttc ttc cat act gac tat cga	2352
Pro Tyr Glu Lys Ile Pro Asp Gln Met Phe Phe His Thr Asp Tyr Arg	
769 774 779 784	
cca ctt att aga gat tct aat aat tat gtc tta gat gag caa act cag	2400
Pro Leu Ile Arg Asp Ser Asn Asn Tyr Val Leu Asp Glu Gln Thr Gln	
785 790 795 800	
cag gct cct cat ctt atg cct cca cca ttc ttg gta gat gta gat gga	2448
Gln Ala Pro His Leu Met Pro Pro Pro Phe Leu Val Asp Val Asp Gly	
801 806 811 816	
aat cct cat cca acc aag tat cag aga tta gta cca ggc cga gaa aat	2496
Asn Pro His Pro Thr Lys Tyr Gln Arg Leu Val Pro Gly Arg Glu Asn	
817 822 827 832	
tct gca gat gaa cat ttg att cca cag ctg ggc tat gtg gca aca agt	2544
Ser Ala Asp Glu His Leu Ile Pro Gln Leu Gly Tyr Val Ala Thr Ser	
833 838 843 848	
gat gga gag gtg att gaa caa att ata agc ctg caa acc aat gat aat	2592
Asp Gly Glu Val Ile Glu Gln Ile Ile Ser Leu Gln Thr Asn Asp Asn	
849 854 859 864	
gat gaa cgc agc cca gaa tcg agt att ctt gat gga atg ata aga cag	2640
Asp Glu Arg Ser Pro Glu Ser Ser Ile Leu Asp Gly Met Ile Arg Gln	
865 870 875 880	
ttg cag cag cag caa gat cag aga atg gga gca gat cag gat act att	2688

Leu Gln Gln Gln Gln Asp Gln Arg Met Gly Ala Asp Gln Asp Thr Ile	
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cca aga gga ctt tca aat ggt gaa gaa aca ccc cgg aga ggt ttt aga	2736
Pro Arg Gly Leu Ser Asn Gly Glu Glu Thr Pro Arg Arg Gly Phe Arg	
897	902 907 912
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Arg Leu Ser Leu Asp Ile Gln Ser Pro Pro Asn Ile Gly Leu Arg Arg	
913	918 923 928
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Ser Gly Gln Val Glu Gly Val Arg Gln Met His Gln Asn Ala Pro Arg	
929	934 939 944
agt cag att gct aca gaa cgt gac ctg cag gct tgg aaa cga aga gtg	2880
Ser Gln Ile Ala Thr Glu Arg Asp Leu Gln Ala Trp Lys Arg Arg Val	
945	950 955 960
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Val Val Pro Glu Val Gly Ser Asp Val Cys Cys Ser Leu Leu Tyr Ser	
961	966 971 976
atg ctt ggc tct cac ttt cgg att cag tgg ttt tgg tat cac agt cta	2976
Met Leu Gly Ser His Phe Arg Ile Gln Trp Phe Trp Tyr His Ser Leu	
977	982 987 992
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Asp Lys Gly His Val Gly Val Asn Ile Gln Ile Met Val Glu Glu Ile	
993	998 1003 1008
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Val Ala Gly Glu Thr Ser Cys Asp Gln Ser Glu Gly Ser Gly Ser Ser	
1009	1014 1019 1024
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Glu Glu Asp Glu Trp Arg Ser Asp Arg Lys Ser Glu Ser Tyr Ser Glu	
1025	1030 1035 1040
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Ser Ser Ser Asp Ser Ser Arg Tyr Ser Asp Trp Thr Ala Asp Ala	
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Gly Ile Asn Leu Gln Pro Pro Leu Arg Thr Ser Cys Arg Arg Arg Ile	
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Ser Pro Pro Lys Arg Arg Arg Lys Arg Lys Lys Glu Asn Lys Pro Lys	
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Trp Asp Val Ala Met Val Leu Ser Thr His Leu Glu Met Gly Ala Val				
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Glu Leu Leu Gly Cys Pro Ala Val Lys Leu Gly Ala Gly Ile Gly Leu				
1137	1142	1147	1152	
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Met Gly Ile Val Ala Ala Leu Leu Gly Ala His Val Thr Val Ile Asp				
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cga aaa aat ttg cgg agg atg act cca gca gag ctt gca aat atg gag				3552
Arg Lys Asn Leu Arg Arg Met Thr Pro Ala Glu Leu Ala Asn Met Glu				
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His Leu Tyr Glu Phe His Pro Pro Val Trp Ile Thr Asp Thr Thr Leu				
1185	1190	1195	1200	
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Arg Lys Ser Pro Phe Val Pro Gln Met Gly Asp Glu Val Ile Tyr Phe				
1201	1206	1211	1216	
cga cag ggt cat gaa gct tat att gag gct gta aga aga aat aat att				3696
Arg Gln Gly His Glu Ala Tyr Ile Glu Ala Val Arg Arg Asn Asn Ile				
1217	1222	1227	1232	
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Tyr Glu Leu Asn Pro Asn Lys Glu Pro Trp Arg Lys Met Asp Leu Arg				
1233	1238	1243	1248	
ctc aag aaa gaa ttc cac att tta gca agt ggc aaa gat gtt ggt ttg				3792
Leu Lys Lys Glu Phe His Ile Leu Ala Ser Gly Lys Asp Val Gly Leu				
1249	1254	1259	1264	
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Leu Thr Val Ile Gln Ile Ala Gly Gly Asp Gln Glu Leu Val Lys Ile				
1265	1270	1275	1280	
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Val Gly Ile Arg Tyr Glu Val Gly Pro Pro Thr Leu Cys Cys Leu Lys				
1281	1286	1291	1296	
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Leu Ala Phe Ile Asp Pro Ala Thr Gly Lys Leu Met Asp Lys Ser Phe				
1297	1302	1307	1312	
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Ser Ile Arg Tyr His Asp Met Pro Asp Val Ile Asp Phe Leu Val Leu				
1313	1318	1323	1328	
cgt caa ttt tat gat gaa gca aga cag agg aat tgg cag tct tgt gac				4032
Arg Gln Phe Tyr Asp Glu Ala Arg Gln Arg Asn Trp Gln Ser Cys Asp				
1329	1334	1339	1344	

aga ttc cgc tct att att gat gat gct tgg tgg ttt gga aca gtg tta	4080
Arg Phe Arg Ser Ile Ile Asp Asp Ala Trp Trp Phe Gly Thr Val Leu	
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Ser Gln Glu Pro Tyr Gln Pro Gln Tyr Pro Asp Ser His Phe Gln Cys	
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Tyr Ile Val Arg Trp Asp Asn Thr Glu Ile Glu Lys Leu Ser Pro Trp	
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gac atg gaa cca att cct gat aat gtt gat cca cct gaa gaa tta gga	4224
Asp Met Glu Pro Ile Pro Asp Asn Val Asp Pro Pro Glu Glu Leu Gly	
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Ala Ser Ile Ser Val Thr Thr Asp Glu Leu Glu Lys Leu Leu Tyr Lys	
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Pro Gln Ala Gly Glu Trp Gly Gln Lys Ser Arg Asp Glu Glu Cys Asp	
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Arg Ile Ile Ser Gly Ile Asp Gln Leu Leu Asn Leu Asp Ile Ala Ala	
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Val Val Ala Tyr Pro Thr Asp Leu Tyr Thr Ile Arg Met Arg Leu Val	
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Asn Arg Phe Tyr Arg Ala Leu His Leu Ala Glu Asn Trp Gly Val Thr	
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Ser Tyr Asp Asp Ser Asp Leu Pro Lys Thr Ser Ser Gly Arg Arg Arg	
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Val His Asp Gly Lys Lys Ser Ile Arg Ala Thr Asn Tyr Val Glu Ser	
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Asp Tyr Arg Asp Ile Ile Asp Thr Pro Met Asp Phe Gly Thr Val Arg	
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Glu Lys Met Lys Lys Ile Ser Ser Asp Phe Lys Ile Gly Gln Lys Phe	
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Asn Glu Lys Leu Arg Arg Ser Gln Arg Phe Lys Gln Arg Gln Asn Cys	
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Lys Gly Asp Ser Gln Pro Asn Lys Ser Ile Arg Asn Leu Lys Pro Lys	
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Arg Leu Lys Ser Gln Thr Lys Ile Ile Pro Glu Leu Val Gly Ser Pro	
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Ala Glu Ser Ser Glu Arg Arg Lys Arg Asn Arg Pro Ile Thr Asn Gly	
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Ser Thr Leu Ser Glu Ser Glu Val Glu Asp Ser Leu Ala Thr Ser Leu	
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Ser Ser Ser Ala Ser Ser Ser Ser Glu Glu Ser Lys Glu Ser Ser Arg	
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Ala Arg Glu Ser Ser Ser Arg Ser Gly Leu Ser Arg Ser Ser Asn Leu	
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Val Ala Arg Lys Lys Leu Leu His Asn Ser Glu Asp Glu Gln Ser Leu	
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Lys Ser Glu Ile Glu Glu Glu Glu Leu Lys Asp Glu Asn Gln Leu Leu	
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Trp His Ala Asn Gly Tyr Lys Ser His Thr Pro Ala Pro Ser Lys Thr	
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 Met Pro Gly Thr Lys
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 Arg Phe Gln His Val Ile Glu Thr Pro Glu Pro Gly Lys Trp Glu Leu
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 Ser Gly Tyr Glu Ala Ala Val Pro Ile Thr Glu Lys Ser Asn Pro Leu
 22 27 32 37

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 Thr Gln Asp Leu Asp Lys Ala Asp Ala Glu Asn Ile Val Arg Leu Leu
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 Gly Gln Cys Asp Ala Glu Ile Phe Gln Glu Glu Gly Gln Ala Leu Ser
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Ser	Val	Ser	Phe	Asn	Gln	Leu	Met	Lys	Gly	Leu	Gly	Gln	Lys	Pro	Leu	
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Tyr	Thr	Tyr	Leu	Ile	Ala	Gly	Gly	Asp	Arg	Ser	Val	Val	Ala	Ser	Arg	
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Glu	Gly	Thr	Glu	Asp	Ser	Ala	Leu	His	Gly	Ile	Glu	Glu	Leu	Lys	Lys	
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Leu	Ser	Ala	Pro	Phe	Val	Ala	Gly	Gln	Met	Asp	Cys	Cys	Met	Asn	Asn	
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Thr	Ala	Val	Phe	Leu	Pro	Val	Leu	Val	Gly	Phe	Asn	Pro	Val	Ser	Met	
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Ala	Glu	Arg	Met	Gln	Lys	Met	Gln	Glu	Lys	Gln	Lys	Ala	Phe	Val	Leu	
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His	Lys	Thr	Val	Asp	Gln	Gly	Ile	Ala	Ala	Ser	Gln	Arg	Cys	Leu	Leu	
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cga gat gtc cgt ggc ttt ctc att ggt gat cac agt gac atg ttt aac				1217
Arg Asp Val Arg Gly Phe Leu Ile Gly Asp His Ser Asp Met Phe Asn				
358	363	368	373	
cag aag gct gag ctc acc aac cag ggt ccc cag ttc acc ttc tcc cag				1265
Gln Lys Ala Glu Leu Thr Asn Gln Gly Pro Gln Phe Thr Phe Ser Gln				
374	379	384	389	
gag gac ttc ccg act tcc atc ctt ccc tct ctc acg gaa atc gat act				1313
Glu Asp Phe Pro Thr Ser Ile Leu Pro Ser Leu Thr Glu Ile Asp Thr				
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Val Val Phe Ile Phe Thr Leu Asp Asp Asn Leu Thr Glu Val Gln Thr				
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His Ser Thr Val Gly Gln Thr Leu Leu Ile Pro Leu Lys Lys Leu Phe				
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Leu Asn Thr Val Ser Thr Gly Ala His Val Leu Leu Gly Lys Ile Leu				
486	491	496	501	
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Gln Asn His Met Leu Asp Leu Arg Ile Ser Asn Ser Lys Leu Phe Trp				
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Arg Ala Leu Ala Met Leu Gln Arg Phe Ser Gly Gln Ser Lys Ala Arg				
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Cys Ile Glu Ser Leu Leu Arg Ala Ile His Phe Pro Gln Pro Leu Ser				
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Asp Asp Ile Arg Ala Ala Pro Ile Ser Cys His Val Gln Val Ala His				
550	555	560	565	
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Glu Lys Glu Gln Val Ile Pro Ile Ala Leu Leu Ser Leu Leu Phe Arg				
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Leu Leu Glu Thr Leu Leu Leu Ala Ala His Lys Thr Val Asp Gln Gly	
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Lys Thr Asn His Ile Gln Ala Leu Ala His Ser Thr Val Gly Gln Thr	
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Leu Leu Ile Pro Leu Lys Lys Leu Phe Pro Ser Ile Ile Ser Ile Thr	
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Trp Pro Leu Leu Phe Phe Glu Tyr Glu Gly Asn Phe Ile Gln Lys Phe	
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Arg Phe Ser Gly Gln Ser Lys Ala Arg Cys Ile Glu Ser Leu Leu Arg	
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	1 5 10					
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Thr Trp Gln Ala Leu Pro Met Ala Val Leu Phe Leu Leu Leu Phe Leu	
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Cys Gly Thr Pro Gln Ala Ala Asp Asn Met Gln Ala Ile Tyr Val Ala	
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Val Leu Val Leu Lys Gly Ser Gln Leu Ser Ala Arg Ala Ala Asp Gly	
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Ser Pro Cys Asn Val Leu Leu Cys Ser Val Val Pro Ser Arg Arg Met	
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Gln Ser Phe Trp Gly Ser Glu Ala Ala Leu Leu Leu Val Cys Pro Gly	
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Glu Gly Leu Ser Glu Pro Arg Ser Arg Arg Pro Arg Ile Ile Arg Cys	
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 Asp Ala Ser Pro Ala Leu Cys Ala Pro Ser Thr Gly Trp Asp Met Pro
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aga atg gca gat ttt ggg atc tct gct ggc cag ttt gtg gca gtg gtc	168
Met Ala Asp Phe Gly Ile Ser Ala Gly Gln Phe Val Ala Val Val	
1 5 10	
tgg gat aag tca tcc cca gtg gag gct ctg aaa ggt ctg gtg gat aag	216
Trp Asp Lys Ser Ser Pro Val Glu Ala Leu Lys Gly Leu Val Asp Lys	
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Leu Gln Ala Leu Thr Gly Asn Glu Gly Arg Val Ser Val Glu Asn Ile	
32 37 42 47	
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Lys Gln Leu Leu Gln Ser Ala His Lys Glu Ser Ser Phe Asp Ile Ile	
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Leu Ser Gly Leu Val Pro Gly Ser Thr Thr Leu His Ser Ala Glu Ile	
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ttg gct gaa atc gcc cgg atc ctt cgg cct ggt gga tgt ctt ttt ctg	408
Leu Ala Glu Ile Ala Arg Ile Leu Arg Pro Gly Gly Cys Leu Phe Leu	
80 85 90 95	
aag gag cca gta gag aca gct gta gat aac aat agc aaa gtg aag aca	456
Lys Glu Pro Val Glu Thr Ala Val Asp Asn Asn Ser Lys Val Lys Thr	
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gca tct aag ctg tgt tca gcc ctg act ctt tct ggt ctt gtg gaa gtg	504
Ala Ser Lys Leu Cys Ser Ala Leu Thr Leu Ser Gly Leu Val Glu Val	
112 117 122 127	
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Lys Glu Leu Gln Arg Glu Pro Leu Thr Pro Glu Glu Val Gln Ser Val	
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Thr Gly Lys Lys Pro Asn Phe Glu Val Gly Ser Ser Arg Gln Leu Lys	
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Met Ala Asp Phe Gly Ile Ser Ala Gly Gln Phe Val Ala Val Val	
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Trp Asp Lys Ser Ser Pro Val Glu Ala Leu Lys Gly Leu Val Asp Lys	
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Leu Gln Ala Leu Thr Gly Asn Glu Gly Arg Val Ser Val Glu Asn Ile	
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Lys Gln Leu Leu Gln Cys Leu Val Pro Gly Ser Thr Thr Leu His Ser	
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Val Glu Val Lys Glu Leu Gln Arg Glu Pro Leu Thr Pro Glu Glu Val	
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cca gaa gat ttg aag aag cca gat cca gct tcc ctg cgg gct gct tct	792
Pro Glu Asp Leu Lys Lys Pro Asp Pro Ala Ser Leu Arg Ala Ala Ser	
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cctctggtgc cctgaggagg ttgtgagcca cttgactcgt gtcacaaaga atggagtaaa				1813
ctaacaactc tgaaagacaa gaggggtggca gcattgctga gatgagactc aaggcagggg				1873
tctgcagctc tgtcacagag tgttaatgct caacgatgcc tgggctcaag agcgttctgg				1933
tcagcatttt aacatcagaa gaagggttc ttcaggacac actcccttct cttaacatga				1993
ggatgaagaaa cccatcccat tctgaaacca ggtcccataa taccttggtc ttttgataca				2053
cagcagcact acacaccact gtgccccccc agccagcttc actctgtctg ctaagcacc				2113
actctgcaaa cagatctcag agtgaacaaa tncagagag gtgggagagc caccatggng				2173
ggatgtgagg nacagagtgg cttgangagc aaatgggtccc atgtcaagac ctntagcat				2233
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ttgccaagcg aggatnncca antacattca caactgacct gggttgagta tcgtccctga				2353
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<220>
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<400> 1057

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ttcctgaaaag cttcgtaggg cccgagccct gtgagcccag gttctgcgcc cactaggagg	180
tgtcatgctg actgcttttt ttaaagccct agaatcttgg cttcggcggt tggggtaagc	240
tccgttctcg ttctcaagcg cgtttccgcg aactctcgcg ggattgacgg gccgtctcga	300
gagccggcat ctctaggag ctagtcctgg tcctcggcta ggcggcttgg ggtcgcggcg	360
taactgggga gccagcctga cgccggcgga ccccgctgt gatcctggca acg atg	416
	Met
	1
gat gat gac ttg atg ttg gca ctg cgg ctt cag gag gag tgg aac ttg	464
Asp Asp Asp Leu Met Leu Ala Leu Arg Leu Gln Glu Glu Trp Asn Leu	
2 7 12 17	
cag gag gcg gag cgc gat cat gcc cag gag tcc ctg tcg cta gtg gac	512
Gln Glu Ala Glu Arg Asp His Ala Gln Glu Ser Leu Ser Leu Val Asp	
18 23 28 33	
gcg tcg tgg gag ttg gtg gac ccc aca ccg gac ttg cag gca ctg ttt	560
Ala Ser Trp Glu Leu Val Asp Pro Thr Pro Asp Leu Gln Ala Leu Phe	
34 39 44 49	
gtt cag ttt aac gac caa ttc ttc tgg ggc cag ctg gag gcc gtc gag	608
Val Gln Phe Asn Asp Gln Phe Phe Trp Gly Gln Leu Glu Ala Val Glu	
50 55 60 65	
gtg aag tgg agc gtg cga atg acc ctg tgt gct ggg ata tgc agc tat	656
Val Lys Trp Ser Val Arg Met Thr Leu Cys Ala Gly Ile Cys Ser Tyr	
66 71 76 81	
gaa ggg aag ggt gga atg tgt tcc atc cgt ctc agc gaa ccc ctt ttg	704
Glu Gly Lys Gly Gly Met Cys Ser Ile Arg Leu Ser Glu Pro Leu Leu	
82 87 92 97	
aag ttg agg cca aga aag gat ctt gta gag acc ctc ctg cat gaa atg	752
Lys Leu Arg Pro Arg Lys Asp Leu Val Glu Thr Leu Leu His Glu Met	
98 103 108 113	
ata cat gcc tat tta ttt gtc act aat aac gac aaa gac cga gaa ggg	800

Ile His Ala Tyr Leu Phe Val Thr Asn Asn Asp Lys Asp Arg Glu Gly	
114 119 124 129	
cat ggt cca gaa ttt tgt aaa cat atg cat cgc atc aac agc ctg act	848
His Gly Pro Glu Phe Cys Lys His Met His Arg Ile Asn Ser Leu Thr	
130 135 140 145	
gga gcc aat ata acg gta tac cat act ttt cac gat gag gtg gat gag	896
Gly Ala Asn Ile Thr Val Tyr His Thr Phe His Asp Glu Val Asp Glu	
146 151 156 161	
tat cgg cga cac tgg tgg cgc tgc aat ggg ccg tgc cag cac agg cca	944
Tyr Arg Arg His Trp Trp Arg Cys Asn Gly Pro Cys Gln His Arg Pro	
162 167 172 177	
ccg tat tac ggc tat gtc aaa cga gct act aac agg gaa ccc tct gct	992
Pro Tyr Tyr Gly Tyr Val Lys Arg Ala Thr Asn Arg Glu Pro Ser Ala	
178 183 188 193	
cat gac tat tgg tgg gct gag cac cag aaa acc tgt gga ggc act tac	1040
His Asp Tyr Trp Trp Ala Glu His Gln Lys Thr Cys Gly Gly Thr Tyr	
194 199 204 209	
ata aaa atc aag gaa cca gag aat tac tca aaa aaa ggc aaa gga aag	1088
Ile Lys Ile Lys Glu Pro Glu Asn Tyr Ser Lys Lys Gly Lys Gly Lys	
210 215 220 225	
gca aaa cta gga aag gaa cca gta ttg gcc gca gag aat aaa gat aaa	1136
Ala Lys Leu Gly Lys Glu Pro Val Leu Ala Ala Glu Asn Lys Asp Lys	
226 231 236 241	
ccc aac aga ggt gag gcc cag cta gta atc cct ttt agt ggg aaa gga	1184
Pro Asn Arg Gly Glu Ala Gln Leu Val Ile Pro Phe Ser Gly Lys Gly	
242 247 252 257	
tat gtt cta gga gaa aca agc aat tta cct tca cct ggg aaa ctg atc	1232
Tyr Val Leu Gly Glu Thr Ser Asn Leu Pro Ser Pro Gly Lys Leu Ile	
258 263 268 273	
act tca cat gcc att aat aaa acc caa gat ctt tta aat caa aac cat	1280
Thr Ser His Ala Ile Asn Lys Thr Gln Asp Leu Leu Asn Gln Asn His	
274 279 284 289	
tca gca aat gct gta aga ctt aat tct aaa atc aag gtg aaa ttt gaa	1328
Ser Ala Asn Ala Val Arg Leu Asn Ser Lys Ile Lys Val Lys Phe Glu	
290 295 300 305	
cag aat ggt tca agt aaa aat tct cat ctg gtc tcc cct gct gtt agt	1376
Gln Asn Gly Ser Ser Lys Asn Ser His Leu Val Ser Pro Ala Val Ser	
306 311 316 321	
aac agt cac caa aat gtt cta agc aac tac ttt cct aga gta tca ttt	1424
Asn Ser His Gln Asn Val Leu Ser Asn Tyr Phe Pro Arg Val Ser Phe	
322 327 332 337	
gcc aac caa aag gct ttc aga ggt gtg aat gga tct cca agg ata agt	1472
Ala Asn Gln Lys Ala Phe Arg Gly Val Asn Gly Ser Pro Arg Ile Ser	

338	343	348	353	
gta aca gtt ggc aac atc cct aaa aac tca gtc tct tct agt tct cag				1520
Val Thr Val Gly Asn Ile Pro Lys Asn Ser Val Ser Ser Ser Ser Gln				
354	359	364	369	
aga agg ggt tca tct tct aag ata tcc cta aga aat tct tca aaa gta				1568
Arg Arg Gly Ser Ser Ser Lys Ile Ser Leu Arg Asn Ser Ser Lys Val				
370	375	380	385	
acg gaa tca gca tct gtg atg cca tcc cag gat gtg agt ggg tct gaa				1616
Thr Glu Ser Ala Ser Val Met Pro Ser Gln Asp Val Ser Gly Ser Glu				
386	391	396	401	
gat aca ttc cca aat aaa cga cct agg cta gaa gat aag act gtt ttt				1664
Asp Thr Phe Pro Asn Lys Arg Pro Arg Leu Glu Asp Lys Thr Val Phe				
402	407	412	417	
gac aat ttt ttt atc aag aaa gag caa ata aaa agc agt ggt aat gat				1712
Asp Asn Phe Phe Ile Lys Lys Glu Gln Ile Lys Ser Ser Gly Asn Asp				
418	423	428	433	
cca aag tat agt aca acc aca gct cag aat tcc agc agt tca tcc agt				1760
Pro Lys Tyr Ser Thr Thr Thr Ala Gln Asn Ser Ser Ser Ser Ser				
434	439	444	449	
cag agc aaa atg gtt aat tgc cca gtt tgt cag aat gaa gtt ctg gag				1808
Gln Ser Lys Met Val Asn Cys Pro Val Cys Gln Asn Glu Val Leu Glu				
450	455	460	465	
tct cag att aat gag cac ttg gac tgg tgc ctt gaa ggt gac agc atc				1856
Ser Gln Ile Asn Glu His Leu Asp Trp Cys Leu Glu Gly Asp Ser Ile				
466	471	476	481	
aaa gtc aaa agc gag gaa agt ctt tga aaaaggtttc aaagtcttc				1902
Lys Val Lys Ser Glu Glu Ser Leu *				
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<210> 1058

<211> 1450

<212> DNA

<213> Homo sapiens

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<222> (397)..(1176)

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<222> (1)...(1450)

<223> n = a,t,c or g

<400> 1058

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tctccttact ctctgactc ttaattacat cacacctgtg tcgacactct ctgggaaaag	180
actgaagaaa taatcttttc aagaagcaga aagctcctgc atacataggc tgatacgcca	240
cctactgcaa aaccgagctg acagcgcagg cantgctgcc agcgtttcca ttccatcacc	300
aggctggggc tgaataaagg cgtgcttggtg tggtagtgct tctttttaaa aaatctcaaa	360
gccagaaga acaagctgaa atagcatctt caaaaa atg gag cgt aaa ata aac	414
Met Glu Arg Lys Ile Asn	
1	
aga aga gaa aaa gaa aag gag tat gaa ggg aaa cac aac agc ctg gaa	462
Arg Arg Glu Lys Glu Lys Glu Tyr Glu Gly Lys His Asn Ser Leu Glu	
7 12 17 22	
gat act gat caa gga aag aac tgc aaa tcc aca ctg atg acc ctc aac	510
Asp Thr Asp Gln Gly Lys Asn Cys Lys Ser Thr Leu Met Thr Leu Asn	
23 28 33 38	
gtt ggt gga tat tta tac att act caa aaa caa aca ctg acc aag tac	558
Val Gly Gly Tyr Leu Tyr Ile Thr Gln Lys Gln Thr Leu Thr Lys Tyr	
39 44 49 54	
cca gac act ttc ctt gaa ggt ata gta aat gga aaa atc ctc tgc ccg	606
Pro Asp Thr Phe Leu Glu Gly Ile Val Asn Gly Lys Ile Leu Cys Pro	
55 60 65 70	
ttt gat gct gat ggt cat tat ttc ata gac agg gat ggt ctc ctc ttc	654
Phe Asp Ala Asp Gly His Tyr Phe Ile Asp Arg Asp Gly Leu Leu Phe	
71 76 81 86	
agg cat gtc cta aac ttc cta cga aat gga gaa ctt cta ttg ccc gaa	702
Arg His Val Leu Asn Phe Leu Arg Asn Gly Glu Leu Leu Leu Pro Glu	
87 92 97 102	
ggg ttt cga gaa aat caa ctt ctt gca caa gaa gca gaa ttc ttt cag	750
Gly Phe Arg Glu Asn Gln Leu Leu Ala Gln Glu Ala Glu Phe Phe Gln	
103 108 113 118	
ctc aag gga ctg gca gag gaa gtg aaa tcc agg tgg gag aaa gaa cag	798
Leu Lys Gly Leu Ala Glu Glu Val Lys Ser Arg Trp Glu Lys Glu Gln	
119 124 129 134	
cta aca ccc aga gag act act ttc ttg gaa ata aca gat aac cac gat	846
Leu Thr Pro Arg Glu Thr Thr Phe Leu Glu Ile Thr Asp Asn His Asp	
135 140 145 150	
cgt tca caa gga tta aga atc ttc tgt aat gct cct gat ttc ata tca	894
Arg Ser Gln Gly Leu Arg Ile Phe Cys Asn Ala Pro Asp Phe Ile Ser	
151 156 161 166	
aaa ata aag tct cgc att gtt ctg gtg tcc aaa agc agg ctg gat gga	942

14	19	24	29	
ggc tgc acg gat atc ata tgc tgt gtg ttc ctg ctc ctg gcc att gtg				144
Gly Cys Thr Asp Ile Ile Cys Cys Val Phe Leu Leu Leu Ala Ile Val				
30	35	40	45	
ggc tac gtg gct gta ggc atc ata gcc tgg act cat gga gac cct cga				192
Gly Tyr Val Ala Val Gly Ile Ile Ala Trp Thr His Gly Asp Pro Arg				
46	51	56	61	
aag gtg atc tac ccc act gat agc cgg ggc gag ttc tgc ggg cag aag				240
Lys Val Ile Tyr Pro Thr Asp Ser Arg Gly Glu Phe Cys Gly Gln Lys				
62	67	72	77	
ggc aca aaa aac gag aac aaa ccc tat ctg ttt tat ttc aac att gtg				288
Gly Thr Lys Asn Glu Asn Lys Pro Tyr Leu Phe Tyr Phe Asn Ile Val				
78	83	88	93	
aaa tgt gcc agc ccc ctg gtt ctg ctg gaa ttc caa tgt ccc act ccc				336
Lys Cys Ala Ser Pro Leu Val Leu Leu Glu Phe Gln Cys Pro Thr Pro				
94	99	104	109	
cag atc tgc gtg gaa aaa tgc ccc gac cgc tac ctc acg tac ctg aat				384
Gln Ile Cys Val Glu Lys Cys Pro Asp Arg Tyr Leu Thr Tyr Leu Asn				
110	115	120	125	
gct cgc agc tcc cgg gac ttt gag tac tat aag cag ttc tgt gtt cct				432
Ala Arg Ser Ser Arg Asp Phe Glu Tyr Tyr Lys Gln Phe Cys Val Pro				
126	131	136	141	
ggc ttc aag aac aat aaa gga gtg gct gag gtg ctt caa gat ggt gac				480
Gly Phe Lys Asn Asn Lys Gly Val Ala Glu Val Leu Gln Asp Gly Asp				
142	147	152	157	
tgc cct gct gtc ctc atc ccc agc aaa ccc ttg gcc cgg aga tgc ttc				528
Cys Pro Ala Val Leu Ile Pro Ser Lys Pro Leu Ala Arg Arg Cys Phe				
158	163	168	173	
ccc gct atc cac gcc tac aag ggt gtc ctg atg gtg ggc aat gag acg				576
Pro Ala Ile His Ala Tyr Lys Gly Val Leu Met Val Gly Asn Glu Thr				
174	179	184	189	
acc tat gag gat ggg cat ggc tcc cgg aaa aac atc aca gac ctg gtg				624
Thr Tyr Glu Asp Gly His Gly Ser Arg Lys Asn Ile Thr Asp Leu Val				
190	195	200	205	
gag ggc gcc aag aaa gcc aat gga gtc cta gag gcg cgg caa ctc gcc				672
Glu Gly Ala Lys Lys Ala Asn Gly Val Leu Glu Ala Arg Gln Leu Ala				
206	211	216	221	
atg cgc ata ttt gaa gat tac acc gtc tct tgg tac tgg att atc ata				720
Met Arg Ile Phe Glu Asp Tyr Thr Val Ser Trp Tyr Trp Ile Ile Ile				
222	227	232	237	
ggc ctg gtc att gcc atg gcg atg agc ctc ctg ttc atc atc ctg ctt				768
Gly Leu Val Ile Ala Met Ala Met Ser Leu Leu Phe Ile Ile Leu Leu				
238	243	248	253	

cg	ct	gc	gt	gg	at	at	gc	tg	gt	at	at	at	gc	at		816
Arg	Phe	Leu	Ala	Gly	Ile	Met	Val	Trp	Val	Met	Ile	Ile	Met	Val	Ile	
254					259					264					269	
ct	gt	ct	gg	ta	ga	at	tt	ca	tg	ta	at	ga	ta	tc	ca	864
Leu	Val	Leu	Gly	Tyr	Gly	Ile	Phe	His	Cys	Tyr	Met	Glu	Tyr	Ser	Arg	
270					275					280					285	
ct	cg	gg	ga	gc	gg	tc	ga	gc	tc	tt	gt	ga	ca	gc	tt	912
Leu	Arg	Gly	Glu	Ala	Gly	Ser	Asp	Val	Ser	Leu	Val	Asp	Leu	Gly	Phe	
286					291					296					301	
ca	ac	ga	tt	cg	gt	ta	ct	ca	ta	cg	ca	ac	tg	tt	gc	960
Gln	Thr	Asp	Phe	Arg	Val	Tyr	Leu	His	Leu	Arg	Gln	Thr	Trp	Leu	Ala	
302					307					312					317	
tt	at	at	at	ct	ag	at	ct	ga	gc	at	at	at	tt	ct	ct	1008
Phe	Met	Ile	Ile	Leu	Ser	Ile	Leu	Glu	Val	Ile	Ile	Ile	Leu	Leu	Leu	
318					323					328					333	
at	tt	ct	cg	aa	ga	at	ct	at	gc	at	ga	ct	at	aa	ga	1056
Ile	Phe	Leu	Arg	Lys	Arg	Ile	Leu	Ile	Ala	Ile	Ala	Leu	Ile	Lys	Glu	
334					339					344					349	
gc	ag	ag	gc	gt	gg	ta	gc	at	tg	tc	tt	ct	ta	ca	ct	1104
Ala	Ser	Arg	Ala	Val	Gly	Tyr	Val	Met	Cys	Ser	Leu	Leu	Tyr	Pro	Leu	
350					355					360					365	
gt	ac	tt	tt	tt	ct	tg	ct	tg	at	gc	ta	tg	gc	ag	ac	1152
Val	Thr	Phe	Phe	Leu	Leu	Cys	Leu	Cys	Ile	Ala	Tyr	Trp	Ala	Ser	Thr	
366					371					376					381	
gc	gt	tt	ct	tc	ac	ta	ga	gc	gt	ta	aa	at	tt	ga		1200
Ala	Val	Phe	Leu	Ser	Thr	Ser	Asn	Glu	Ala	Val	Tyr	Lys	Ile	Phe	Asp	
382					387					392					397	
ga	ag	cc	tg	ca	tt	ac	gc	aa	ac	tg	aa	ca	ga	ac	tt	1248
Asp	Ser	Pro	Cys	Pro	Phe	Thr	Ala	Lys	Thr	Cys	Asn	Pro	Glu	Thr	Phe	
398					403					408					413	
cc	tc	tc	aa	ga	tc	cg	ca	tg	cc	aa	gc	cg	tg	ca	tt	1296
Pro	Ser	Ser	Asn	Glu	Ser	Arg	Gln	Cys	Pro	Asn	Ala	Arg	Cys	Gln	Phe	
414					419					424					429	
gc	tt	ta	gg	gg	ga	tc	gg	ta	ca	cg	gc	ct	ct	gg	ct	1344
Ala	Phe	Tyr	Gly	Gly	Glu	Ser	Gly	Tyr	His	Arg	Ala	Leu	Leu	Gly	Leu	
430					435					440					445	
ca	at	tt	aa	gc	tt	at	tt	tt	tg	tt	gc	aa	tt	gt	ct	1392
Gln	Ile	Phe	Asn	Ala	Phe	Met	Phe	Phe	Trp	Leu	Ala	Asn	Phe	Val	Leu	
446					451					456					461	
gc	ct	gg	ca	gc	ac	ct	gc	gg	gc	tt	gc	tc	ta	ta	tg	1440
Ala	Leu	Gly	Gln	Val	Thr	Leu	Ala	Gly	Ala	Phe	Ala	Ser	Tyr	Tyr	Trp	
462					467					472					477	

gcc ctg cgc aag ccg gac gac ctg ccg gcc ttc ccg ctc ttc tct gcc	1488
Ala Leu Arg Lys Pro Asp Asp Leu Pro Ala Phe Pro Leu Phe Ser Ala	
478 483 488 493	
ttt ggc cgg gcg ctc agg tac cac aca ggc tcc ctg gcc ttt ggc gcg	1536
Phe Gly Arg Ala Leu Arg Tyr His Thr Gly Ser Leu Ala Phe Gly Ala	
494 499 504 509	
ctc atc ctg gcc att gtg cag atc atc cgt gtg ata ctc gag tac ctg	1584
Leu Ile Leu Ala Ile Val Gln Ile Ile Arg Val Ile Leu Glu Tyr Leu	
510 515 520 525	
gat cag cgg ctg aaa gct gca gag aac aag ttt gcc aag tgc ctc atg	1632
Asp Gln Arg Leu Lys Ala Ala Glu Asn Lys Phe Ala Lys Cys Leu Met	
526 531 536 541	
acc tgt ctc aaa tgc tgc ttc tgg tgc ctg gag aag ttc atc aaa ttc	1680
Thr Cys Leu Lys Cys Cys Phe Trp Cys Leu Glu Lys Phe Ile Lys Phe	
542 547 552 557	
ctt aat agg aat gcc tac atc atg att gcc atc tac ggc acc aat ttc	1728
Leu Asn Arg Asn Ala Tyr Ile Met Ile Ala Ile Tyr Gly Thr Asn Phe	
558 563 568 573	
tgc acc tcg gcc agg aat gcc ttc ttc ctg ctc atg aga aac atc atc	1776
Cys Thr Ser Ala Arg Asn Ala Phe Phe Leu Leu Met Arg Asn Ile Ile	
574 579 584 589	
aga gtg gct gtc ctg gat aaa gtt act gac ttc ctc ttc ctg ttg ggc	1824
Arg Val Ala Val Leu Asp Lys Val Thr Asp Phe Leu Phe Leu Leu Gly	
590 595 600 605	
aaa ctt ctg atc gtt ggt agt gtg ggg atc ctg gct ttc ttc ttc ttc	1872
Lys Leu Leu Ile Val Gly Ser Val Gly Ile Leu Ala Phe Phe Phe Phe	
606 611 616 621	
acc cac cgt atc agg atc gtg cag gat aca gca cca ccc ctc aat tat	1920
Thr His Arg Ile Arg Ile Val Gln Asp Thr Ala Pro Pro Leu Asn Tyr	
622 627 632 637	
tac tgg gtt cct ata ctg acg gtg atc gtt ggc tcc tac ttg att gca	1968
Tyr Trp Val Pro Ile Leu Thr Val Ile Val Gly Ser Tyr Leu Ile Ala	
638 643 648 653	
cac ggt ttc ttc agc gtc tat ggc atg tgt gtg gac acg ctg ttc ctc	2016
His Gly Phe Phe Ser Val Tyr Gly Met Cys Val Asp Thr Leu Phe Leu	
654 659 664 669	
tgc ttc ttg gag gac ctg gag agg aat gac ggc tcg gcc gag agg cct	2064
Cys Phe Leu Glu Asp Leu Glu Arg Asn Asp Gly Ser Ala Glu Arg Pro	
670 675 680 685	
tac ttc atg tct tcc acc ctc aag aaa ctc ttg aac aag acc aac aag	2112
Tyr Phe Met Ser Ser Thr Leu Lys Lys Leu Leu Asn Lys Thr Asn Lys	
686 691 696 701	
aag gca gcg gag tcc tga agggcc cgtgctcccc acctctcaag gagtctcatg	2166

Lys Ala Ala Glu Ser *
702 707

ccgcaggggtg ctcaagtagct gggctctgttc cccagagcccc ttggggtcac ctgaagtcct 2226
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<222> (266)..(961)

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gcggaggcct gggccacggc ggaggcgctg ggtccttctg gcactcctct ggtggaccgc 180
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cgcgagacgc tctctttcct ggaag atg ttt ctg gtg ggc ctg aca ggg ggc 292
Met Phe Leu Val Gly Leu Thr Gly Gly
1 5
att gcc tca ggc aag agc tca gtg atc cag gtg ttc cag cag ctg ggc 340
Ile Ala Ser Gly Lys Ser Ser Val Ile Gln Val Phe Gln Gln Leu Gly
10 15 20 25
tgt gcg gtg att gac gtg gac gtg atg gcc cgg cac gtc gtg cag cca 388
Cys Ala Val Ile Asp Val Asp Val Met Ala Arg His Val Val Gln Pro
26 31 36 41

gga tac cct gcc cac cgg cgc atc gta gag gtc ttc ggc act gag gtc	436
Gly Tyr Pro Ala His Arg Arg Ile Val Glu Val Phe Gly Thr Glu Val	
42 47 52 57	
ttg ctg gag aat ggc gac ata aat cgc aag gtc ctg ggg gac ctg atc	484
Leu Leu Glu Asn Gly Asp Ile Asn Arg Lys Val Leu Gly Asp Leu Ile	
58 63 68 73	
ttt aac cag cct gac cgg cgg cag ctg ctc aac gcc atc acc cac ccc	532
Phe Asn Gln Pro Asp Arg Arg Gln Leu Leu Asn Ala Ile Thr His Pro	
74 79 84 89	
gag att cgc aag gag atg atg aag gag acg ttc aag tac ttc ctc cgg	580
Glu Ile Arg Lys Glu Met Met Lys Glu Thr Phe Lys Tyr Phe Leu Arg	
90 95 100 105	
gga tac cgc tac gtg att ctg gat atc ccc ctg ctg ttt gag acc aag	628
Gly Tyr Arg Tyr Val Ile Leu Asp Ile Pro Leu Leu Phe Glu Thr Lys	
106 111 116 121	
aag ttg ctc aag tac atg aag cac acc gtg gta gta tac tgc gac cgg	676
Lys Leu Leu Lys Tyr Met Lys His Thr Val Val Val Tyr Cys Asp Arg	
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154 159 164 169	
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Lys Arg Gln Val Ile Leu Leu His Thr Glu Leu Glu Arg Ser Leu Glu	
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Tyr Leu Pro Leu Arg Phe Gly Val Leu Thr Gly Leu Ala Ala Ile Ala	
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agc ctc ctc tac ctg ctc acc cac tac ctt ctg cct tac gcc tag tgg	964
Ser Leu Leu Tyr Leu Leu Thr His Tyr Leu Leu Pro Tyr Ala *	
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Met Gly Arg
1
gac cag cgc gcg gtg gcc ggc cct gcc cta cgg cgg tgg ctg ctg ctg 163
Asp Gln Arg Ala Val Ala Gly Pro Ala Leu Arg Arg Trp Leu Leu Leu
4 9 14 19
ggg aca gtg acc gtg ggg ttc ctc gcc cag agc gtc ttg gcg ggt gtg 211
Gly Thr Val Thr Val Gly Phe Leu Ala Gln Ser Val Leu Ala Gly Val
20 25 30 35
aag aag ttt gat gtg ccg tgt gga gga aga gat tgc agt ggg ggc tgc 259
Lys Lys Phe Asp Val Pro Cys Gly Gly Arg Asp Cys Ser Gly Gly Cys
36 41 46 51
cag tgc tac cct gag aaa ggt gga cgt ggt cag cct ggg cca gtg ggc 307
Gln Cys Tyr Pro Glu Lys Gly Gly Arg Gly Gln Pro Gly Pro Val Gly
52 57 62 67
ccc cag ggg tac aat ggg cca cca gga tta caa gga ttc ccg gga ctg 355

Pro Gln Gly Tyr Asn Gly Pro Pro Gly Leu Gln Gly Phe Pro Gly Leu	
68 73 78 83	
cag gga cgt aaa gga gac aag ggt gaa agg gga gcc ccc gga gta aca	403
Gln Gly Arg Lys Gly Asp Lys Gly Glu Arg Gly Ala Pro Gly Val Thr	
84 89 94 99	
gga ccc aag ggc gac gtg gga gca aga ggc gtt tct gga ttc cct ggt	451
Gly Pro Lys Gly Asp Val Gly Ala Arg Gly Val Ser Gly Phe Pro Gly	
100 105 110 115	
gcc gat gga att cct gga cac ccg ggg caa ggt ggg ccc agg gga agg	499
Ala Asp Gly Ile Pro Gly His Pro Gly Gln Gly Gly Pro Arg Gly Arg	
116 121 126 131	
ccg ggc tac gat ggc tgc aac gga acc cag gga gac tca ggt cca cag	547
Pro Gly Tyr Asp Gly Cys Asn Gly Thr Gln Gly Asp Ser Gly Pro Gln	
132 137 142 147	
ggg ccc ccc ggc tct gag ggg ttc acc ggg cct ccc ggg ccc caa gga	595
Gly Pro Pro Gly Ser Glu Gly Phe Thr Gly Pro Pro Gly Pro Gln Gly	
148 153 158 163	
cca aaa ggg cag aaa ggt gag cct tat gca ctg cct aaa gag gag cgc	643
Pro Lys Gly Gln Lys Gly Glu Pro Tyr Ala Leu Pro Lys Glu Glu Arg	
164 169 174 179	
gac aga tat cgg ggt gaa cct gga gag cct gga ttg gtc ggt ttc cag	691
Asp Arg Tyr Arg Gly Glu Pro Gly Glu Pro Gly Leu Val Gly Phe Gln	
180 185 190 195	
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Gly Pro Pro Gly Arg Pro Gly His Val Gly Gln Met Gly Pro Val Gly	
196 201 206 211	
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Ala Pro Gly Arg Pro Gly Pro Pro Gly Pro Pro Gly Pro Lys Gly Gln	
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Gln Gly Asn Arg Gly Leu Gly Phe Tyr Gly Val Lys Gly Glu Lys Gly	
228 233 238 243	
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Asp Val Gly Gln Pro Gly Pro Asn Gly Ile Pro Ser Asp Thr Leu His	
244 249 254 259	
ccc atc atc gcg ccc aca gga gtc acc ttc cac cca gat cag tac aag	931
Pro Ile Ile Ala Pro Thr Gly Val Thr Phe His Pro Asp Gln Tyr Lys	
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Gly Glu Lys Gly Ser Glu Gly Glu Pro Gly Ile Arg Gly Ile Ser Leu	
276 281 286 291	
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Lys Gly Glu Glu Gly Ile Met Gly Phe Pro Gly Leu Arg Gly Tyr Pro	

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Gly Leu Ser Gly Glu Lys Gly Ser Pro Gly Gln Lys Gly Ser Arg Gly				
308	313	318	323	
ctg gat ggc tat caa ggg cct gat gga ccc cgg gga cct aag gga gaa				1123
Leu Asp Gly Tyr Gln Gly Pro Asp Gly Pro Arg Gly Pro Lys Gly Glu				
324	329	334	339	
gcc gga gac cca ggg ccc cct gga cta cct gcc tac tcc cct cac cct				1171
Ala Gly Asp Pro Gly Pro Pro Gly Leu Pro Ala Tyr Ser Pro His Pro				
340	345	350	355	
tcc cta gca aaa ggt gcc aga ggt gac cca gga ttc cca ggg gcc caa				1219
Ser Leu Ala Lys Gly Ala Arg Gly Asp Pro Gly Phe Pro Gly Ala Gln				
356	361	366	371	
ggg gag cca gga agc cag ggt gag cca gga gac ccg ggc ctc cca ggt				1267
Gly Glu Pro Gly Ser Gln Gly Glu Pro Gly Asp Pro Gly Leu Pro Gly				
372	377	382	387	
ccc cct ggc ctc tcc att gga gat gga gat cag agg aga ggc ctg ccg				1315
Pro Pro Gly Leu Ser Ile Gly Asp Gly Asp Gln Arg Arg Gly Leu Pro				
388	393	398	403	
ggt gag atg gga ccc aag ggc ttc atc gga gac ccc ggc atc cct gcg				1363
Gly Glu Met Gly Pro Lys Gly Phe Ile Gly Asp Pro Gly Ile Pro Ala				
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ctc tac ggg ggc cca cct gga cct gat gga aag cga ggg cct cca gga				1411
Leu Tyr Gly Gly Pro Pro Gly Pro Asp Gly Lys Arg Gly Pro Pro Gly				
420	425	430	435	
ccc ccc ggg ctc cct gga cca cct gga cct gat ggc ttc ctg ttt ggg				1459
Pro Pro Gly Leu Pro Gly Pro Pro Gly Pro Asp Gly Phe Leu Phe Gly				
436	441	446	451	
ctg aaa gga gca aaa gga aga gca ggc ttc cct ggg ctt ccc ggc tcc				1507
Leu Lys Gly Ala Lys Gly Arg Ala Gly Phe Pro Gly Leu Pro Gly Ser				
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cct gga gcc ccc gga cca aag ggg tgg aaa ggt gac gct ggg gaa tgc				1555
Pro Gly Ala Pro Gly Pro Lys Gly Trp Lys Gly Asp Ala Gly Glu Cys				
468	473	478	483	
aga tgt aca gaa ggc gac gaa gct atc aaa ggt ctt cca gga ctg cca				1603
Arg Cys Thr Glu Gly Asp Glu Ala Ile Lys Gly Leu Pro Gly Leu Pro				
484	489	494	499	
gga ccc aag ggc ttc gca ggc atc aac ggg gag ccg ggg agg aaa ggg				1651
Gly Pro Lys Gly Phe Ala Gly Ile Asn Gly Glu Pro Gly Arg Lys Gly				
500	505	510	515	
gac aaa gga gac ccc ggc caa cac ggc ctc cct ggg ttc cca ggg ctc				1699
Asp Lys Gly Asp Pro Gly Gln His Gly Leu Pro Gly Phe Pro Gly Leu				
516	521	526	531	

aag gga gtg cct ggc aac att ggt gct ccc gga ccc aaa gga gca aaa	1747
Lys Gly Val Pro Gly Asn Ile Gly Ala Pro Gly Pro Lys Gly Ala Lys	
532 537 542 547	
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Gly Asp Ser Arg Thr Ile Thr Thr Lys Gly Glu Arg Gly Gln Pro Gly	
548 553 558 563	
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Val Pro Gly Val Pro Gly Met Lys Gly Asp Asp Gly Ser Pro Gly Arg	
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gat ggg ctc gat gga ttc ccc ggc ctc cca ggc cct ccc ggt gat ggc	1891
Asp Gly Leu Asp Gly Phe Pro Gly Leu Pro Gly Pro Pro Gly Asp Gly	
580 585 590 595	
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Ile Lys Gly Pro Pro Gly Asp Pro Gly Tyr Pro Gly Ile Pro Gly Thr	
596 601 606 611	
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Lys Gly Thr Pro Gly Glu Met Gly Pro Pro Gly Leu Gly Leu Pro Gly	
612 617 622 627	
ctc aaa ggc caa cgt ggt ttc cct gga gac gcc ggc tta cct gga cca	2035
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628 633 638 643	
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Pro Gly Phe Leu Gly Pro Pro Gly Pro Ala Gly Thr Pro Gly Gln Ile	
644 649 654 659	
gat tgt gac aca gat gtg aaa agg gcc gtt gga ggt gac aga cag gag	2131
Asp Cys Asp Thr Asp Val Lys Arg Ala Val Gly Gly Asp Arg Gln Glu	
660 665 670 675	
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Ala Ile Gln Pro Gly Cys Ile Gly Gly Pro Lys Gly Leu Pro Gly Leu	
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cca gga ccc cca ggc ccc aca ggt gcc aaa ggc ctc cga gga atc cca	2227
Pro Gly Pro Pro Gly Pro Thr Gly Ala Lys Gly Leu Arg Gly Ile Pro	
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Asp Ala Gly Arg Glu Gly Phe Pro Gly Pro Pro Gly Phe Ile Gly Pro	
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cga gga tcc aaa ggt gca gtg ggc ctc cct ggc cca gat gga tcc cca	2371
Arg Gly Ser Lys Gly Ala Val Gly Leu Pro Gly Pro Asp Gly Ser Pro	
740 745 750 755	

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ccc ggg cta aaa gga gat aga ggc tca cct ggg atg gat ggt ttc caa Pro Gly Leu Lys Gly Asp Arg Gly Ser Pro Gly Met Asp Gly Phe Gln 916 921 926 931	2899
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gag gct gga ttt ttc gga ata ccc ggt ctg aag ggt ctg gct ggt gag Glu Ala Gly Phe Phe Gly Ile Pro Gly Leu Lys Gly Leu Ala Gly Glu 948 953 958 963	2995
cca ggt ttt aaa ggc agc cga ggg gac cct ggg ccc cca gga cca cct Pro Gly Phe Lys Gly Ser Arg Gly Asp Pro Gly Pro Pro Gly Pro Pro 964 969 974 979	3043
cct gtc atc ctg cca gga atg aaa gac att aaa gga gag aaa gga gat	3091

Pro Val Ile Leu Pro Gly Met Lys Asp Ile Lys Gly Glu Lys Gly Asp	
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Glu Gly Pro Met Gly Leu Lys Gly Tyr Leu Gly Ala Lys Gly Ile Gln	
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gga atg cca ggc atc cca ggg ctg tca gga atc cct ggg ctg cct ggg	3187
Gly Met Pro Gly Ile Pro Gly Leu Ser Gly Ile Pro Gly Leu Pro Gly	
1012	1017 1022 1027
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Arg Pro Gly His Ile Lys Gly Val Lys Gly Asp Ile Gly Val Pro Gly	
1028	1033 1038 1043
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Ile Pro Gly Leu Pro Gly Phe Pro Gly Val Ala Gly Pro Pro Gly Ile	
1044	1049 1054 1059
acg gga ttc cca gga ttc ata gga aac ccg cta ctt ggg agg ccc atg	3331
Thr Gly Phe Pro Gly Phe Ile Gly Asn Pro Leu Leu Gly Arg Pro Met	
1060	1065 1070 1075
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Lys Ile Val Asn Gly Arg Asn Ile Asn Thr Lys Lys Ile Ile Glu Ser				
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208	213	218	223	
gta aat agt gtg gcc aat gaa gag ggc ttt gca aaa gaa tgc agc tgg				1498
Val Asn Ser Val Ala Asn Glu Glu Gly Phe Ala Lys Glu Cys Ser Trp				
224	229	234	239	
aga aca cag tca ttc aac aac tat tca cca aat tct cac agc tcc aaa				1546
Arg Thr Gln Ser Phe Asn Asn Tyr Ser Pro Asn Ser His Ser Ser Lys				
240	245	250	255	
cat gta tct caa tat act ttc gtg gac aat gat gag gga ggt ata tct				1594
His Val Ser Gln Tyr Thr Phe Val Asp Asn Asp Glu Gly Gly Ile Ser				
256	261	266	271	
tgg gtt acc agc aac aga gat ccc cct att ttc tca gca gga gtc aaa				1642
Trp Val Thr Ser Asn Arg Asp Pro Pro Ile Phe Ser Ala Gly Val Lys				
272	277	282	287	
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Glu Gly Gly Lys Arg Lys Lys Lys Lys Arg Lys Glu Val Gln Lys Lys				
288	293	298	303	
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cgaggaggagt ccactctggag cggccaagta ggctcggggaa gggccgcgcc tgacgtctgg	180
ccgcaggtgg tgactctcac aaggaaatag gatc atg gca gca gat gat gac	232
Met Ala Ala Asp Asp Asp	

aat ggt gat gga aca agt tta ttt gat gtc ttt tct gct tct cct ctt Asn Gly Asp Gly Thr Ser Leu Phe Asp Val Phe Ser Ala Ser Pro Leu 7 12 17 22	280
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gct gtt tct gac agc gct tcc aaa tcc tgt gta cca tca aga aat tgt Ala Val Ser Asp Ser Ala Ser Lys Ser Cys Val Pro Ser Arg Asn Cys 39 44 49 54	376
ttg gac tta tat gaa gag atc ctg act gaa gaa gga act gca aag gag Leu Asp Leu Tyr Glu Glu Ile Leu Thr Glu Glu Gly Thr Ala Lys Glu 55 60 65 70	424
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gaa aag gaa gga aaa cca cat tct gat aaa agg agt act tca cat tta Glu Lys Glu Gly Lys Pro His Ser Asp Lys Arg Ser Thr Ser His Leu 199 204 209 214	856
cct aca tct gtt gag aaa cac tgc act aat ggt gtt tgg tca cgt tct Pro Thr Ser Val Glu Lys His Cys Thr Asn Gly Val Trp Ser Arg Ser 215 220 225 230	904

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gaa cca aag act gaa agc aaa agt tcg aag ttt aaa agt aac tca gat Glu Pro Lys Thr Glu Ser Lys Ser Ser Lys Phe Lys Ser Asn Ser Asp 295 300 305 310	1144
tct gac tat aaa ggt gaa cgc att aac tct tct tgg gag aaa gag acc Ser Asp Tyr Lys Gly Glu Arg Ile Asn Ser Ser Trp Glu Lys Glu Thr 311 316 321 326	1192
cct gga gaa agg tca cac agt cga gta gac tct caa agt gac aaa aaa Pro Gly Glu Arg Ser His Ser Arg Val Asp Ser Gln Ser Asp Lys Lys 327 332 337 342	1240
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cct cat tcc aag aat gaa ata aca ttt tct cat aat tca agt aaa tac Pro His Ser Lys Asn Glu Ile Thr Phe Ser His Asn Ser Ser Lys Tyr 391 396 401 406	1432
cat cta gaa gag aga aga gga tgg gaa gat tgt aaa aga gac aag agt His Leu Glu Glu Arg Arg Gly Trp Glu Asp Cys Lys Arg Asp Lys Ser 407 412 417 422	1480
gta aac agt cat agt ttt caa gat gga aga tgt cca tct tct ctt tca Val Asn Ser His Ser Phe Gln Asp Gly Arg Cys Pro Ser Ser Leu Ser 423 428 433 438	1528
aac agt aga act cac aaa aac att gac tct aag gaa gtt gat gcc atg Asn Ser Arg Thr His Lys Asn Ile Asp Ser Lys Glu Val Asp Ala Met 439 444 449 454	1576